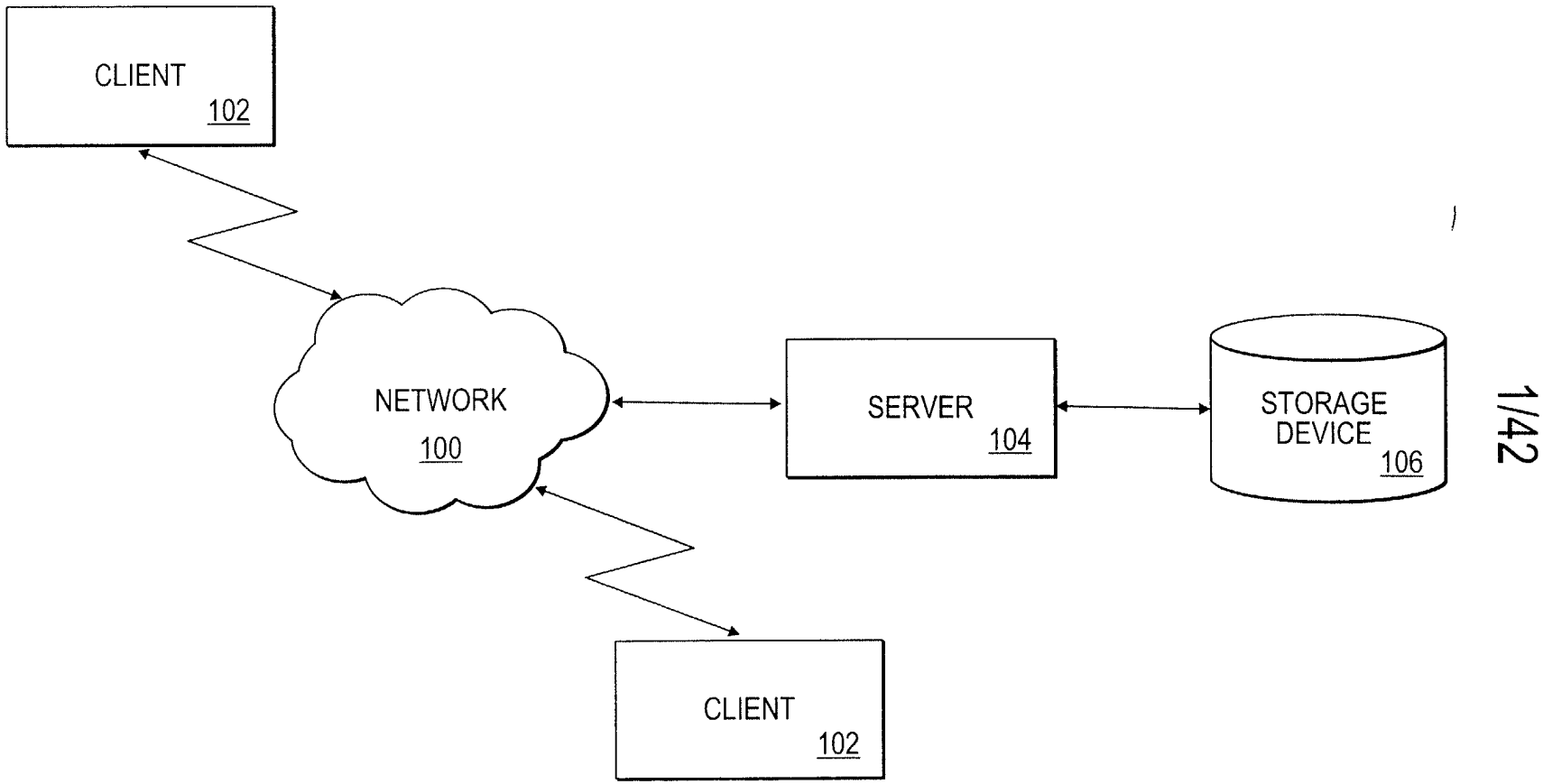
CLIENT
102
NETWORK
100
SERVER
104
STORAGE
DEVICE
106
CLIENT
102

Fig. 1

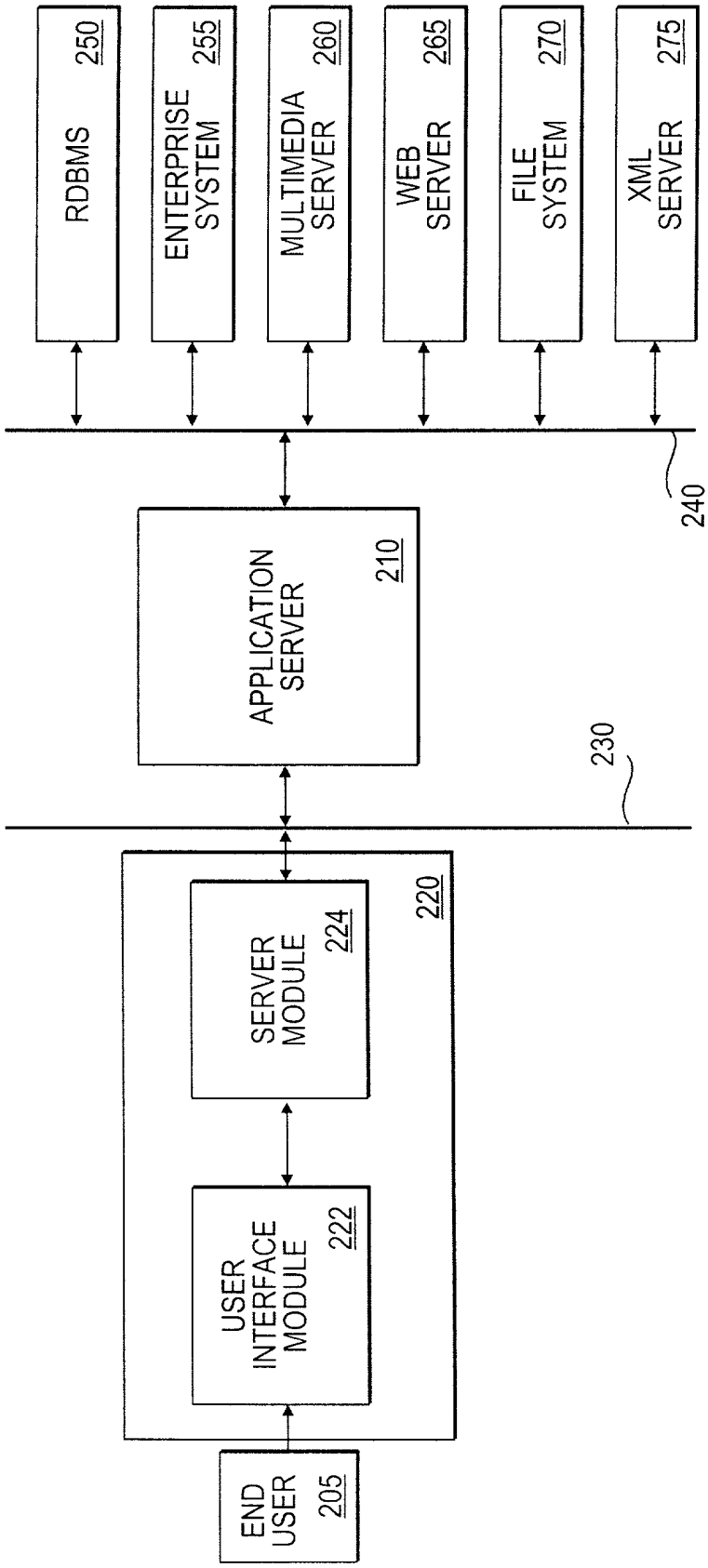
RDBMS 250
ENTERPRISE SYSTEM 255
MULTIMEDIA SERVER 260
WEB SERVER 265
FILE SYSTEM 270
XML SERVER 275
240
APPLICATION SERVER 210
230
220
SERVER MODULE 224
USER INTERFACE MODULE 222
END USER 205

Fig. 2

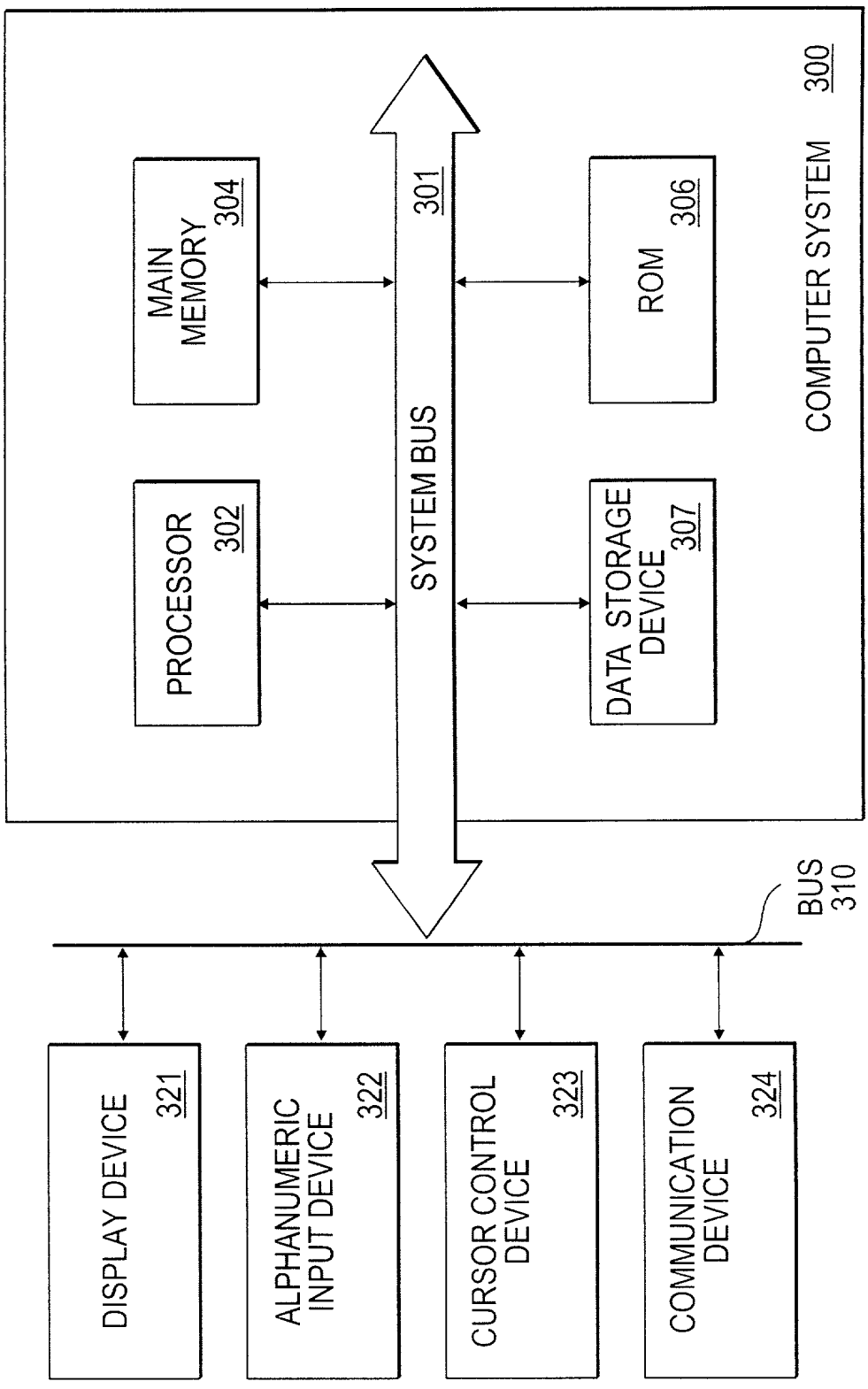
COMPUTER SYSTEM 300
MAIN MEMORY 304
PROCESSOR 302
SYSTEM BUS 301
ROM 306
DATA STORAGE DEVICE 307
BUS 310
DISPLAY DEVICE 321
ALPHANUMERIC INPUT DEVICE 322
CURSOR CONTROL DEVICE 323
COMMUNICATION DEVICE 324

Fig. 3

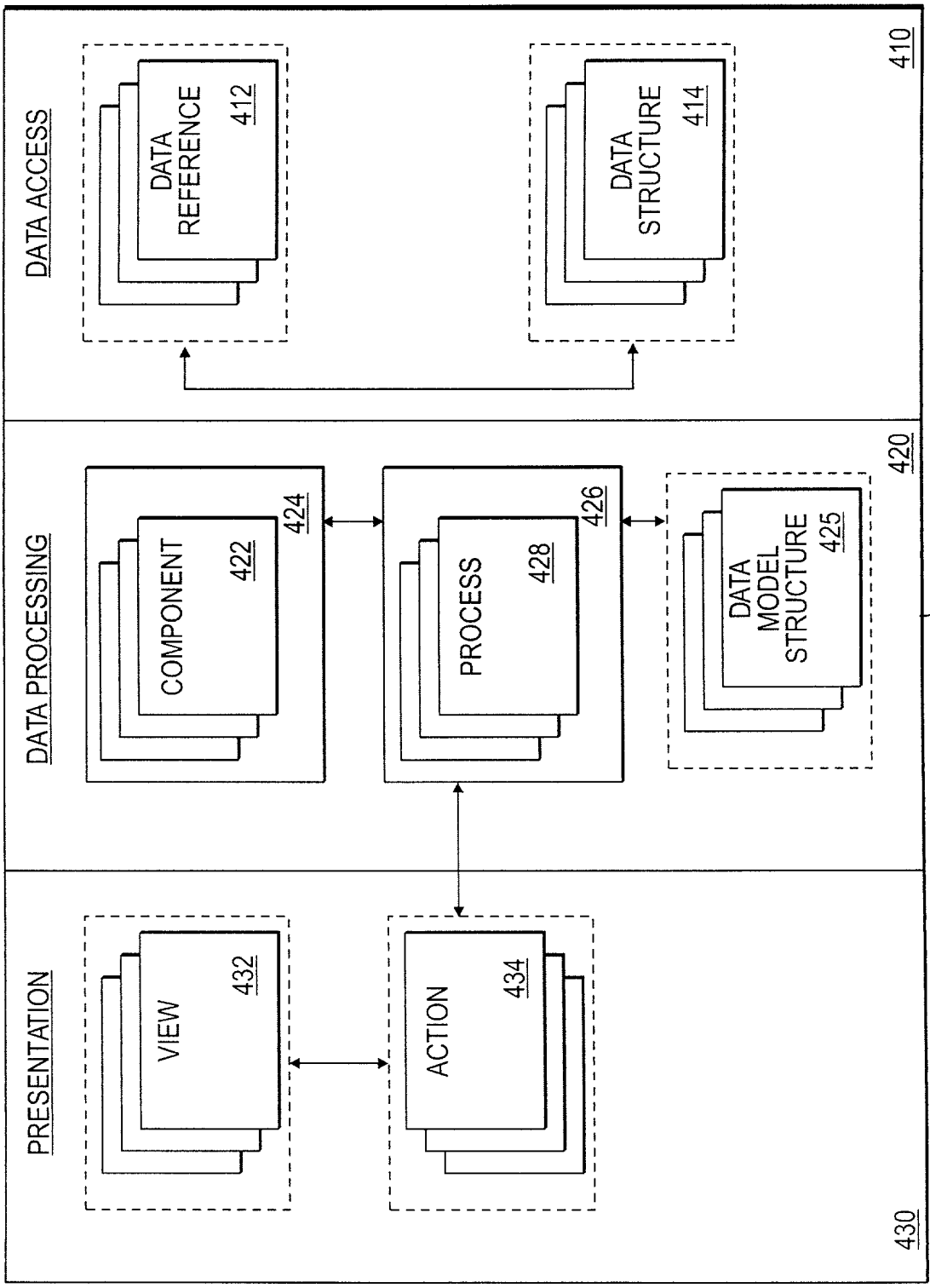
DATA ACCESS
410
DATA REFERENCE
412
DATA STRUCTURE
414
DATA PROCESSING
420
COMPONENT
422
424
PROCESS
428
426
DATA MODEL STRUCTURE
425
400
PRESENTATION
430
VIEW
432
ACTION
434

Fig. 4A

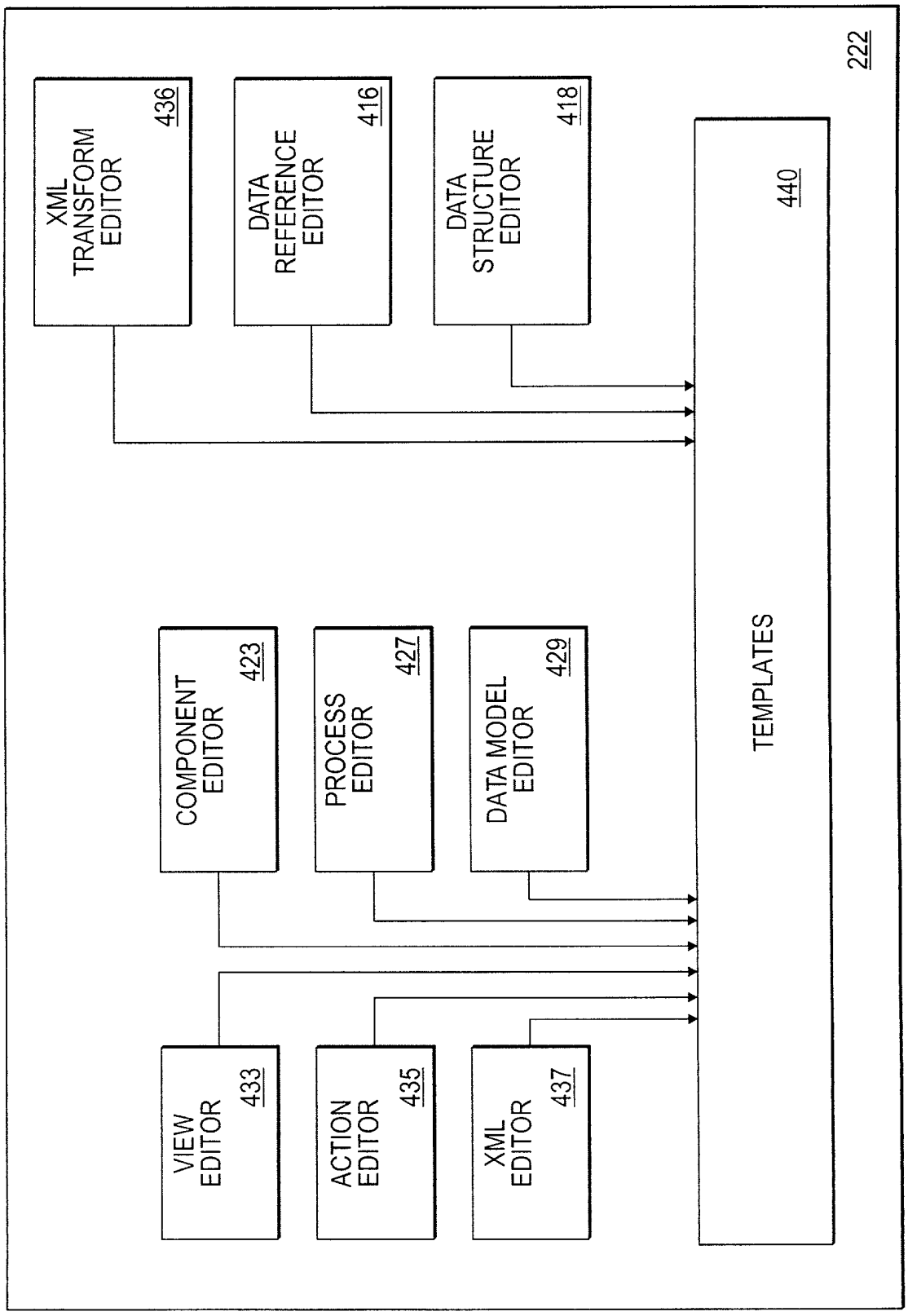
222
XML TRANSFORM EDITOR
436
DATA REFERENCE EDITOR
416
DATA STRUCTURE EDITOR
418
TEMPLATES
440
COMPONENT EDITOR
423
PROCESS EDITOR
427
DATA MODEL EDITOR
429
VIEW EDITOR
433
ACTION EDITOR
435
XML EDITOR
437

Fig. 4B

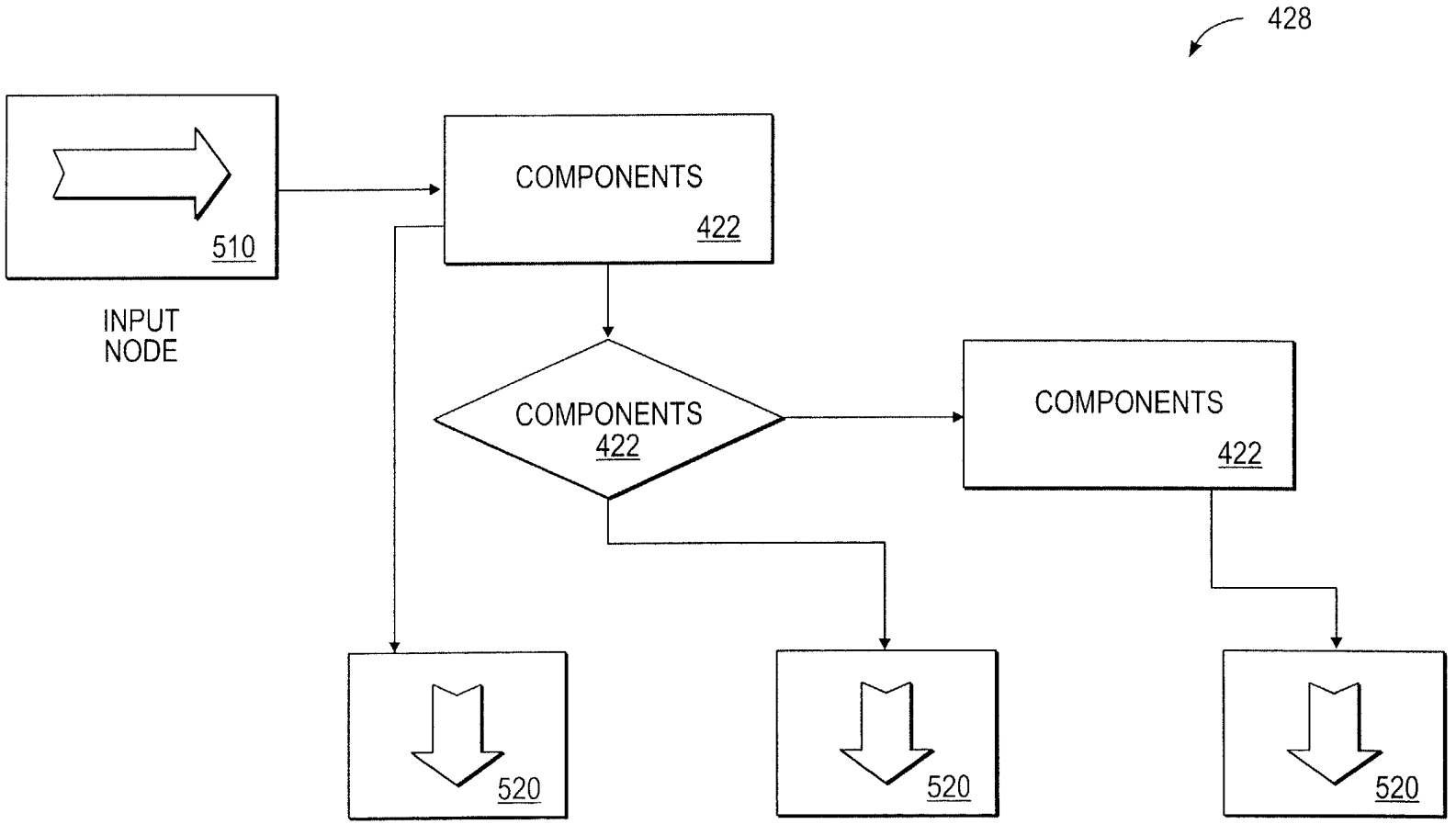
428
510
INPUT NODE
COMPONENTS 422
COMPONENTS 422
COMPONENTS 422
520
520
520

Fig. 5

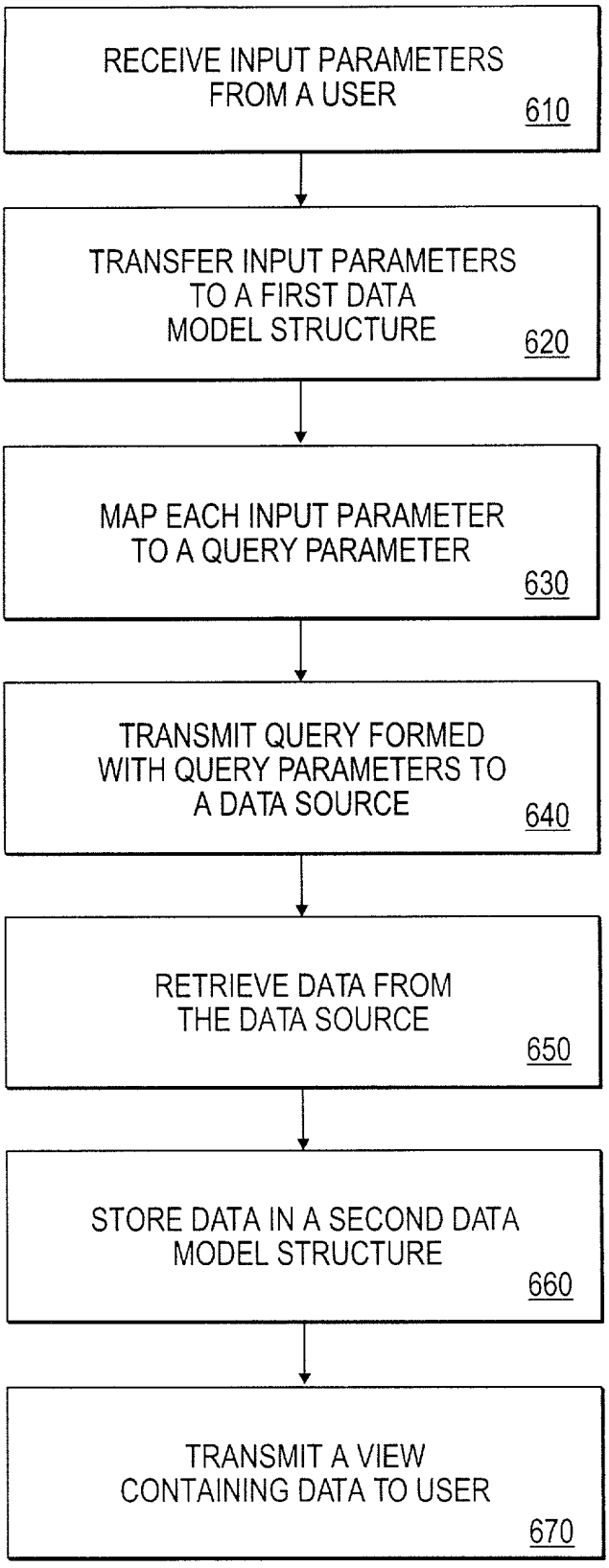
RECEIVE INPUT PARAMETERS FROM A USER
610
TRANSFER INPUT PARAMETERS TO A FIRST DATA MODEL STRUCTURE
620
MAP EACH INPUT PARAMETER TO A QUERY PARAMETER
630
TRANSMIT QUERY FORMED WITH QUERY PARAMETERS TO A DATA SOURCE
640
RETRIEVE DATA FROM THE DATA SOURCE
650
STORE DATA IN A SECOND DATA MODEL STRUCTURE
660
TRANSMIT A VIEW CONTAINING DATA TO USER
670

Fig. 6

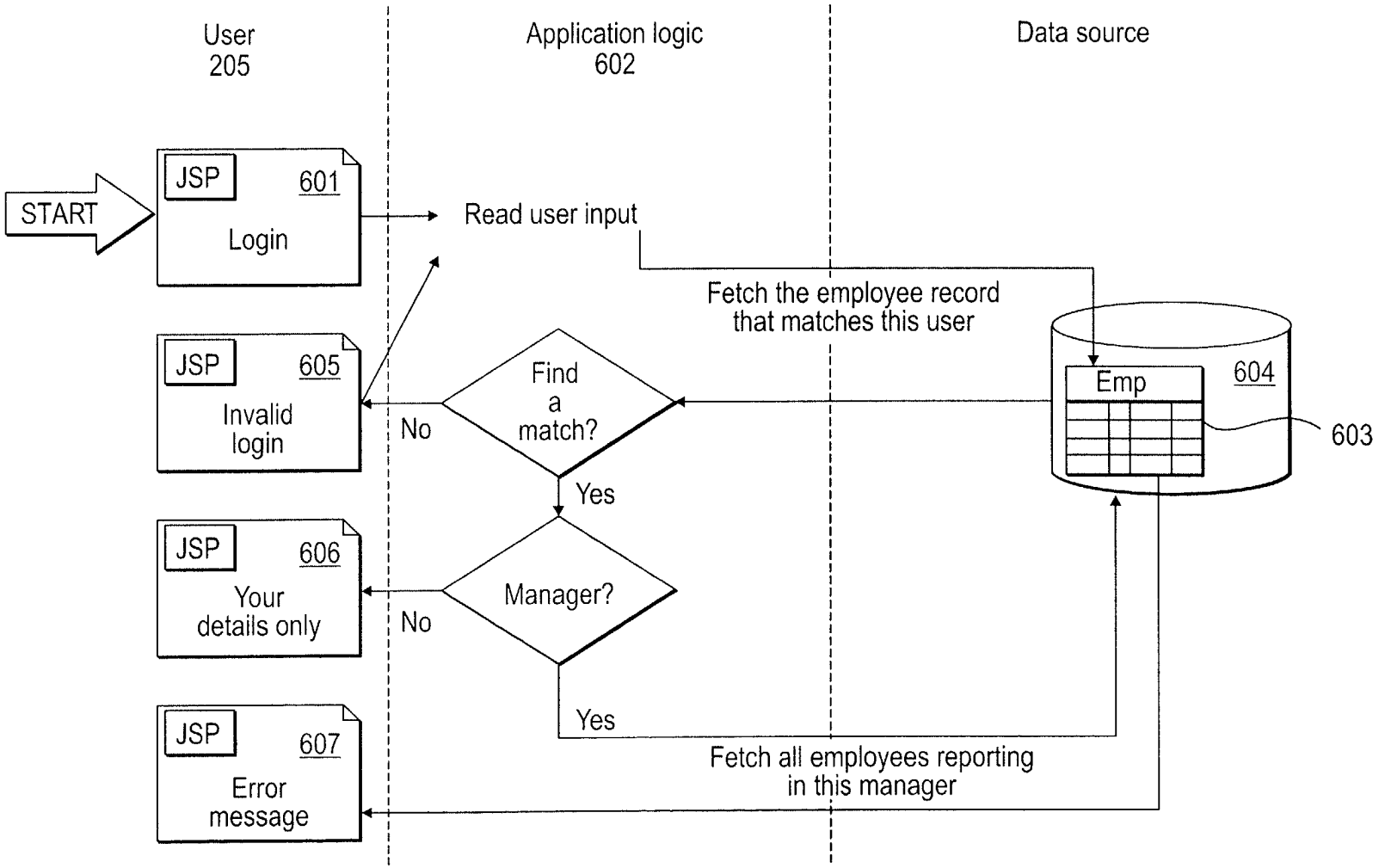
User
205
Application logic
602
Data source
START
JSP
601
Login
Read user input
Fetch the employee record
that matches this user
JSP
605
Invalid
login
No
Find
a
match?
Emp
604
603
Yes
JSP
606
Your
details only
No
Manager?
Yes
JSP
607
Error
message
Fetch all employees reporting
in this manager

Fig. 6A

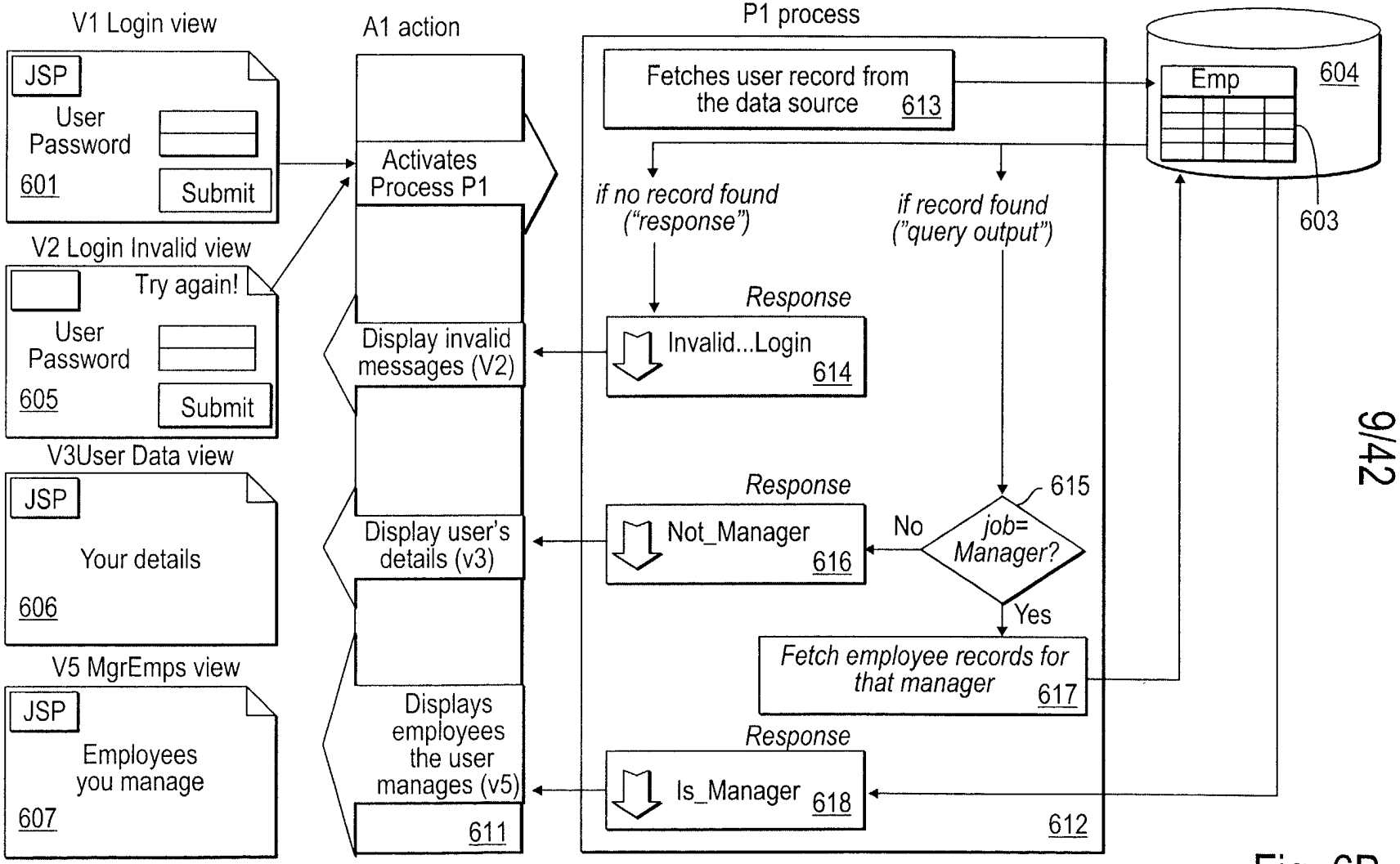
V1 Login view
JSP
User
Password
601
Submit
V2 Login Invalid view
Try again!
User
Password
605
Submit
V3User Data view
JSP
Your details
606
V5 MgrEmps view
JSP
Employees
you manage
607
A1 action
Activates
Process P1
Display invalid
messages (V2)
Display user's
details (v3)
Displays
employees
the user
manages (v5)
611
P1 process
Fetches user record from
the data source 613
if no record found
("response")
if record found
("query output")
Response
Invalid...Login
614
Response
Not_Manager
616
No
615
job=
Manager?
Yes
Fetch employee records for
that manager
617
Response
Is_Manager 618
612
Emp
604
603

Fig. 6B

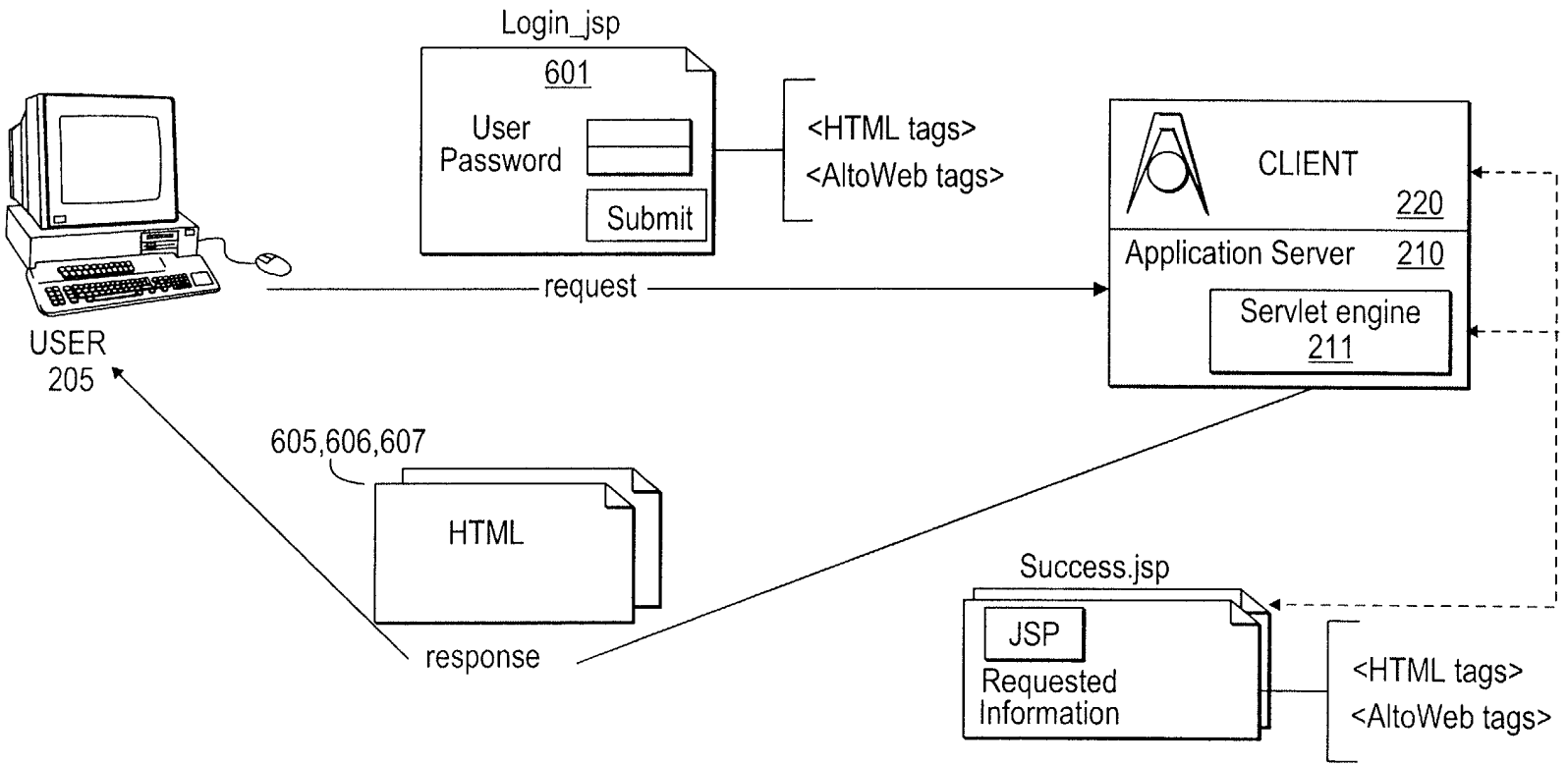
Login_jsp
601
User
Password
Submit
<HTML tags>
<AltoWeb tags>
CLIENT
220
Application Server 210
Servlet engine
211
request
USER
205
605,606,607
HTML
response
Success.jsp
JSP
Requested
Information
<HTML tags>
<AltoWeb tags>

Fig. 6C

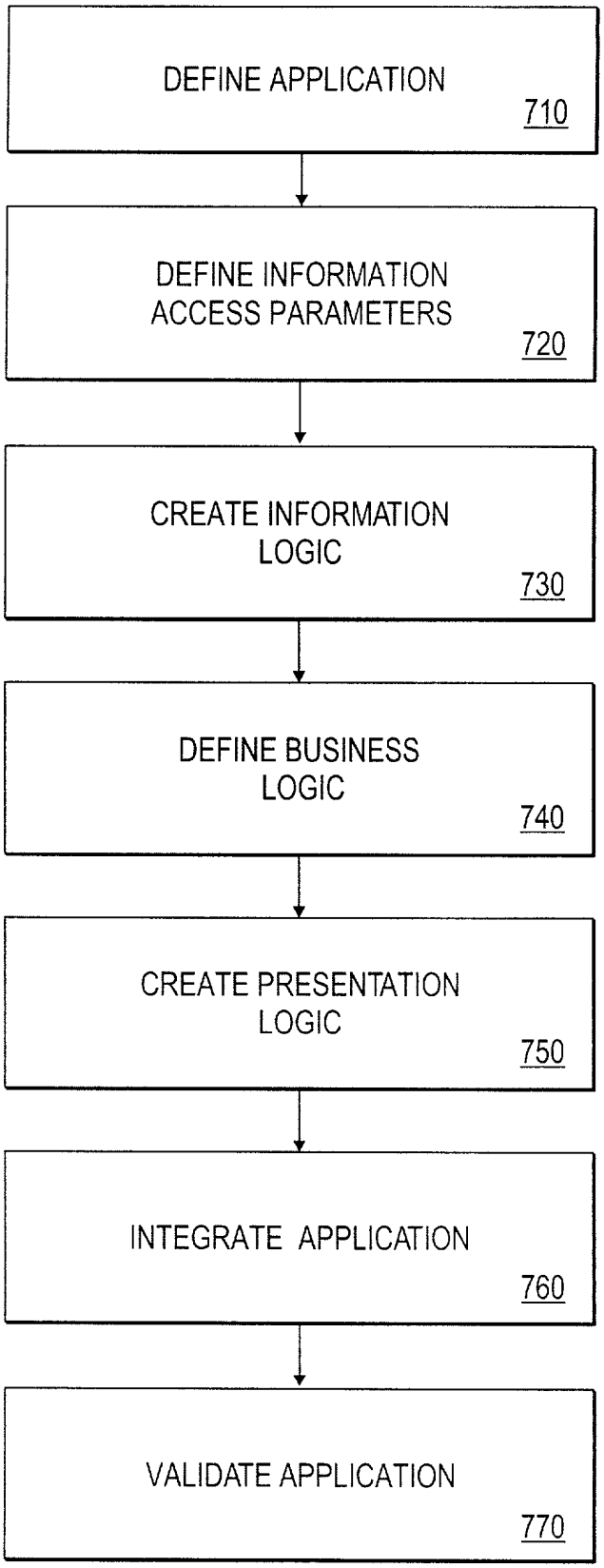
DEFINE APPLICATION
710
DEFINE INFORMATION ACCESS PARAMETERS
720
CREATE INFORMATION LOGIC
730
DEFINE BUSINESS LOGIC
740
CREATE PRESENTATION LOGIC
750
INTEGRATE APPLICATION
760
VALIDATE APPLICATION
770

Fig. 7

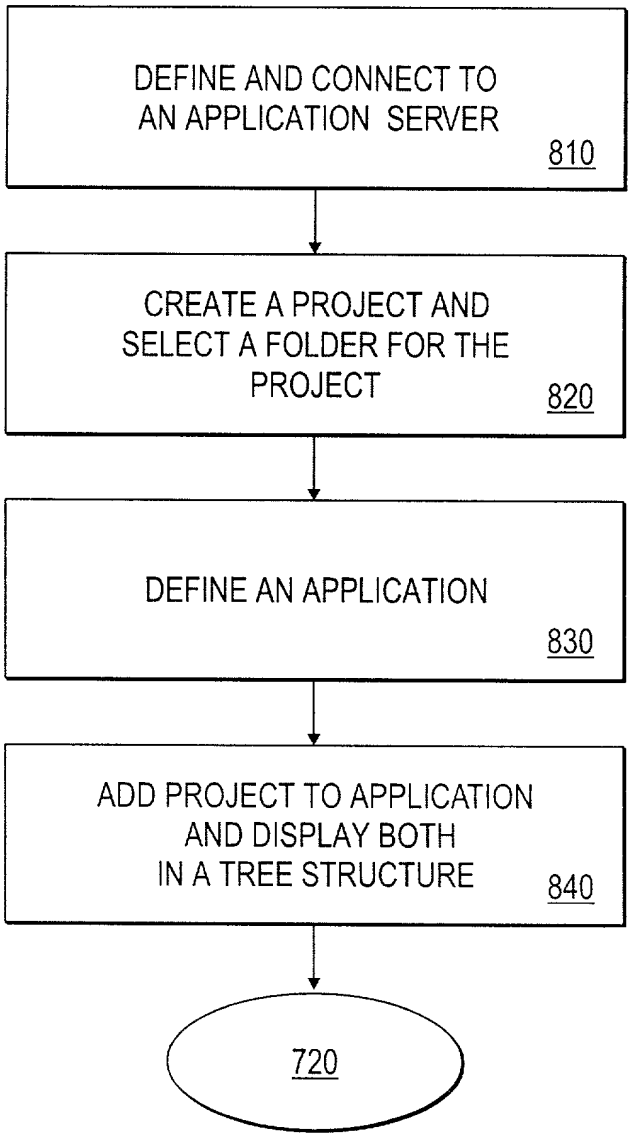
DEFINE AND CONNECT TO AN APPLICATION SERVER
810
CREATE A PROJECT AND SELECT A FOLDER FOR THE PROJECT
820
DEFINE AN APPLICATION
830
ADD PROJECT TO APPLICATION AND DISPLAY BOTH IN A TREE STRUCTURE
840
720

Fig. 8

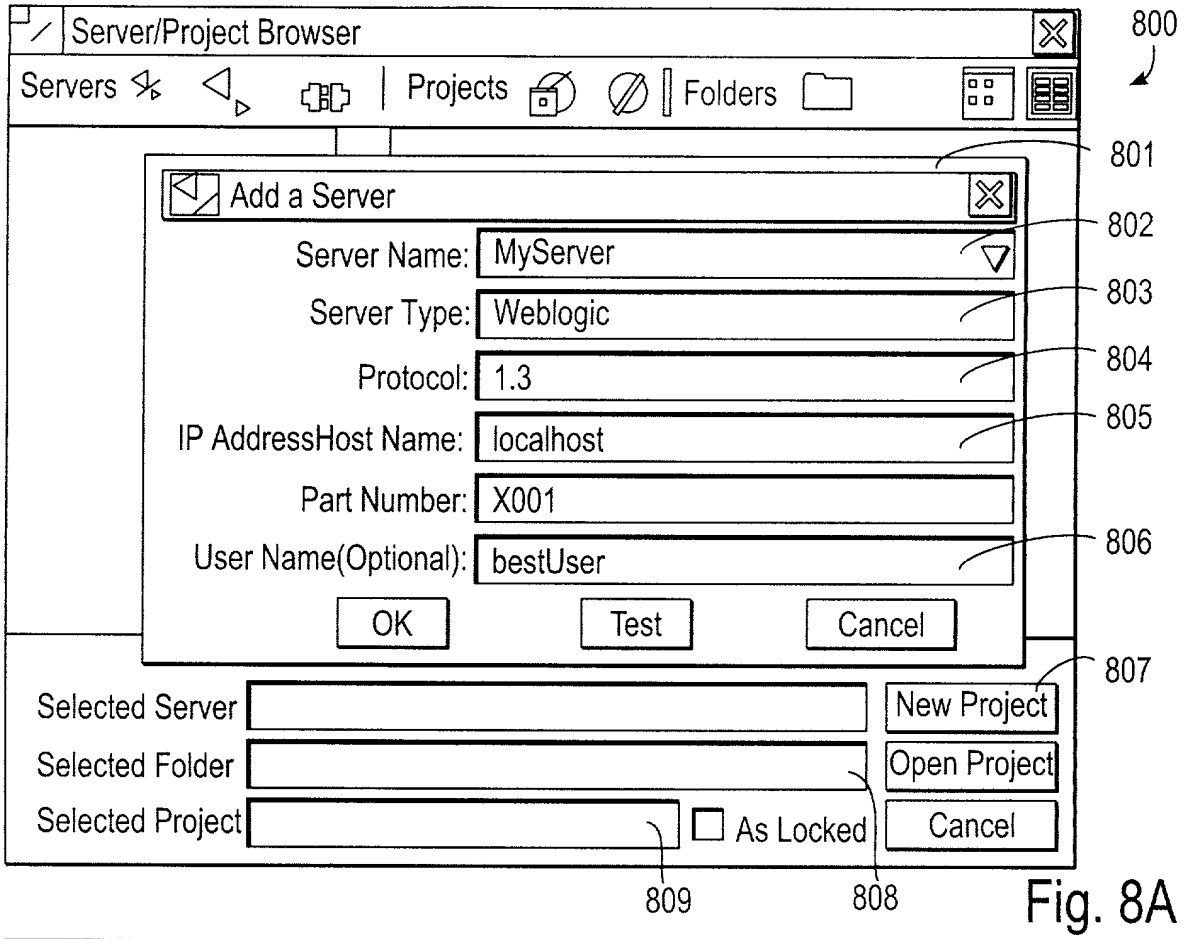
Server/Project Browser
Servers
Projects
Folders
Add a Server
Server Name:
MyServer
Server Type:
Weblogic
Protocol:
1.3
IP AddressHost Name:
localhost
Part Number:
X001
User Name(Optional):
bestUser
OK
Test
Cancel
Selected Server
Selected Folder
Selected Project
As Locked
New Project
Open Project
Cancel
800
801
802
803
804
805
806
807
808
809

Fig. 8A

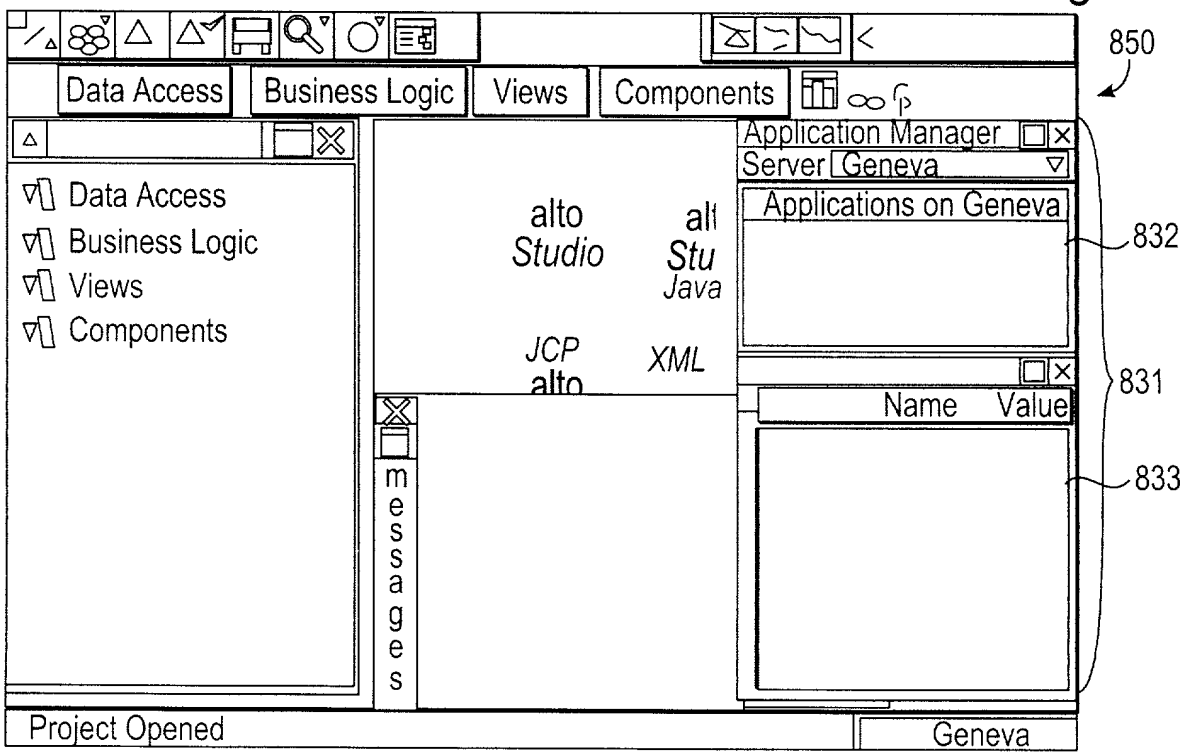
Data Access
Business Logic
Views
Components
Data Access
Business Logic
Views
Components
alto
Studio
JCP
XML
messages
Application Manager
Server Geneva
Applications on Geneva
Name Value
Project Opened
Geneva
850
831
832
833

Fig. 8B

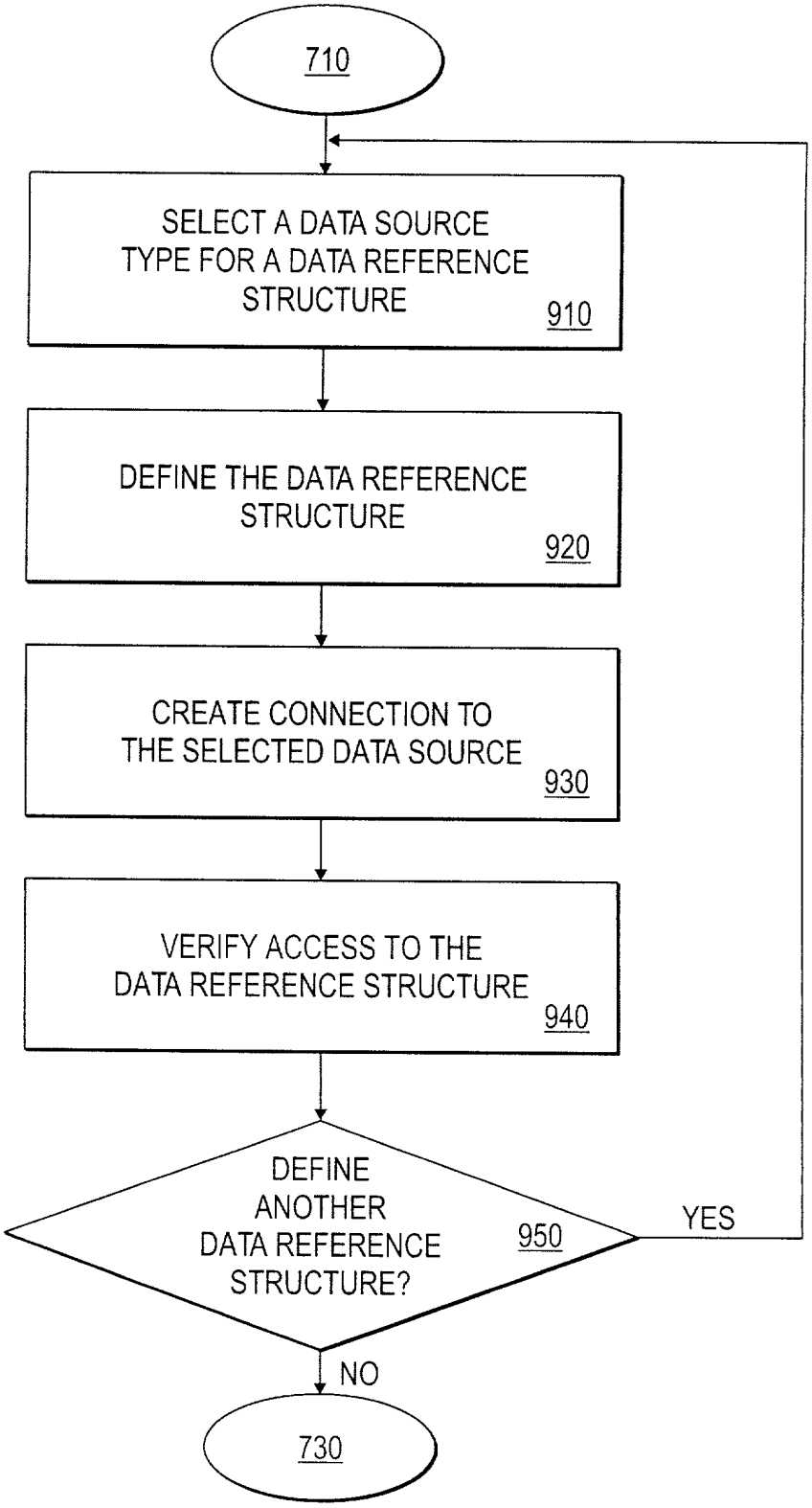
710
SELECT A DATA SOURCE TYPE FOR A DATA REFERENCE STRUCTURE
910
DEFINE THE DATA REFERENCE STRUCTURE
920
CREATE CONNECTION TO THE SELECTED DATA SOURCE
930
VERIFY ACCESS TO THE DATA REFERENCE STRUCTURE
940
DEFINE ANOTHER DATA REFERENCE STRUCTURE?
950
YES
NO
730

Fig. 9

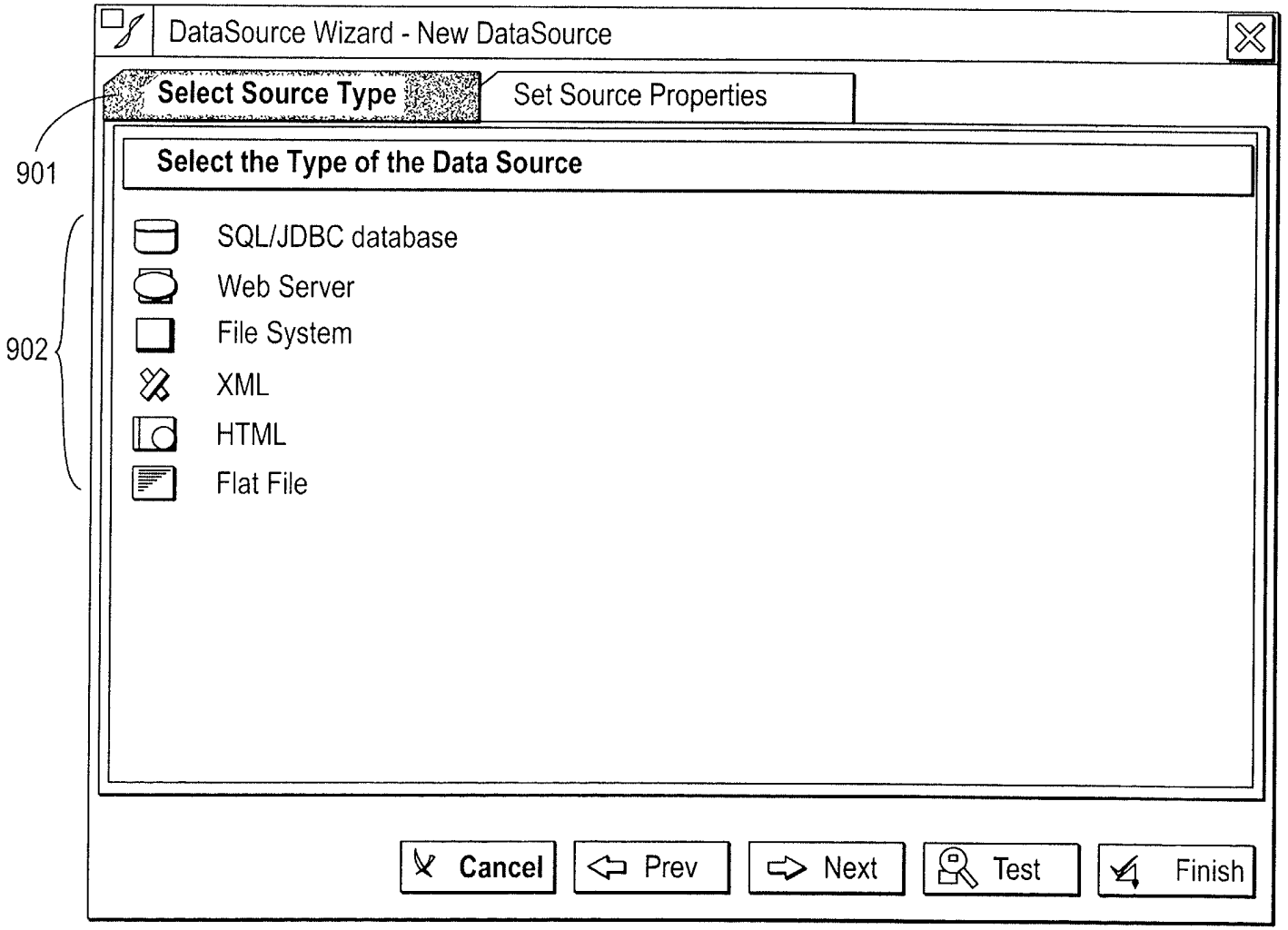
DataSource Wizard - New DataSource
Select Source Type
Set Source Properties
Select the Type of the Data Source
SQL/JDBC database
Web Server
File System
XML
HTML
Flat File
Cancel
Prev
Next
Test
Finish
900
901
902

Fig. 9A

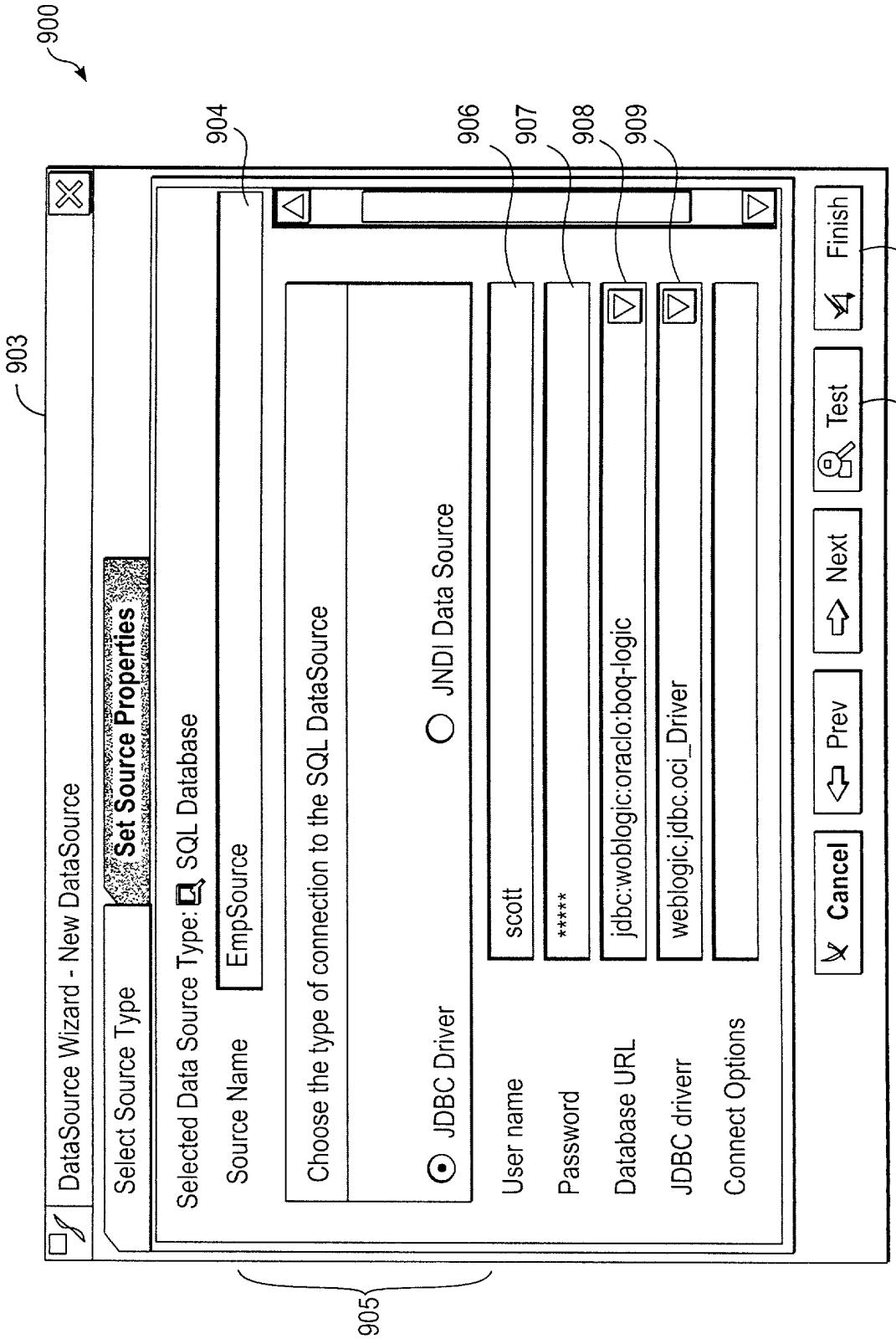
900
903
904
905
906
907
908
909
911
912
DataSource Wizard - New DataSource
Select Source Type
Set Source Properties
Selected Data Source Type: SQL Database
Source Name
EmpSource
Choose the type of connection to the SQL DataSource
JDBC Driver
JNDI Data Source
User name
scott
Password
*****
Database URL
jdbc:woblogic:oraclo:boq-logic
JDBC driverr
weblogic.jdbc.oci_Driver
Connect Options
Cancel
Prev
Next
Test
Finish

Fig. 9B

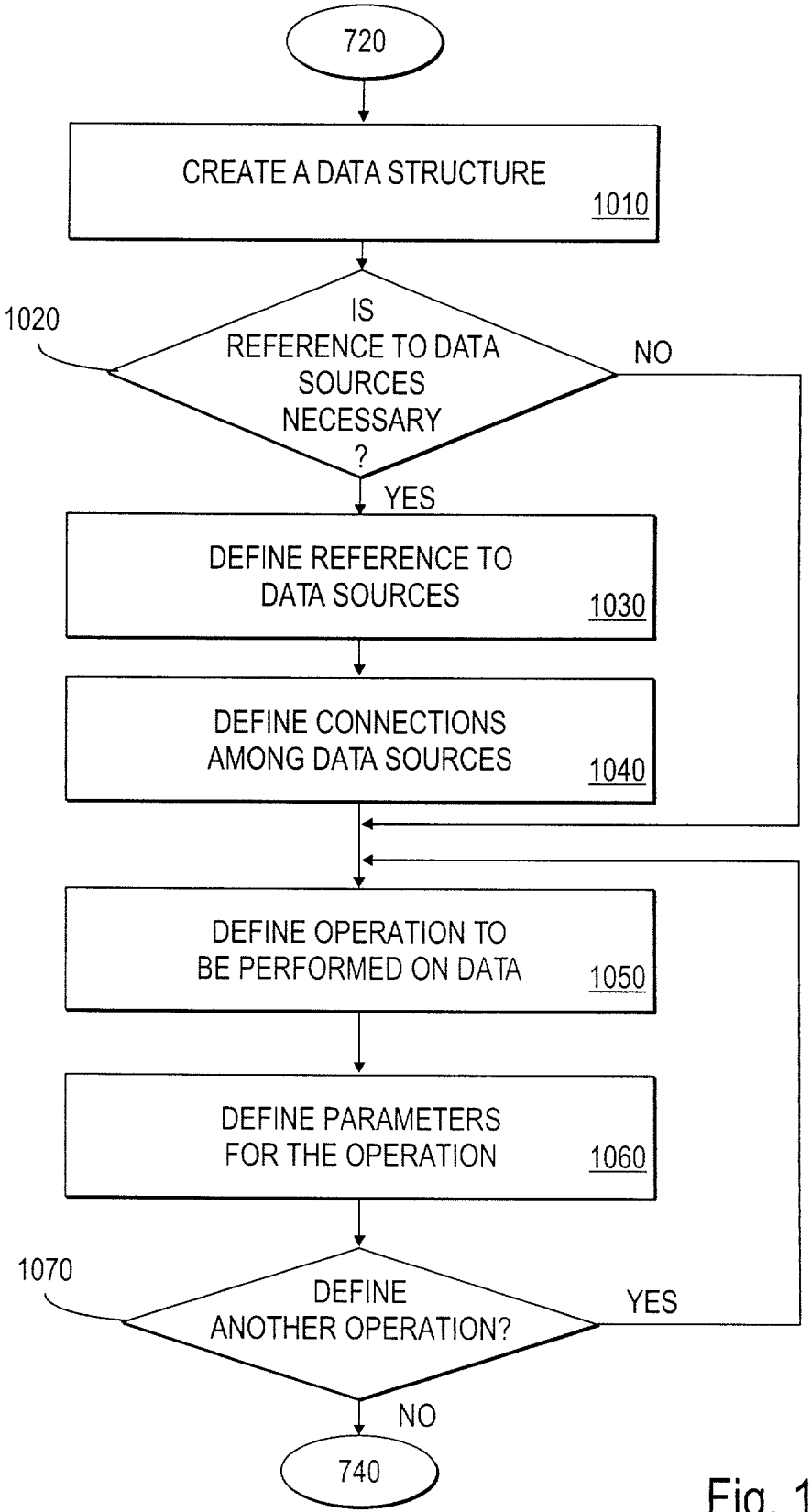
720
CREATE A DATA STRUCTURE
1010
1020
IS REFERENCE TO DATA SOURCES NECESSARY ?
NO
YES
DEFINE REFERENCE TO DATA SOURCES
1030
DEFINE CONNECTIONS AMONG DATA SOURCES
1040
DEFINE OPERATION TO BE PERFORMED ON DATA
1050
DEFINE PARAMETERS FOR THE OPERATION
1060
1070
DEFINE ANOTHER OPERATION?
YES
NO
740

Fig. 10

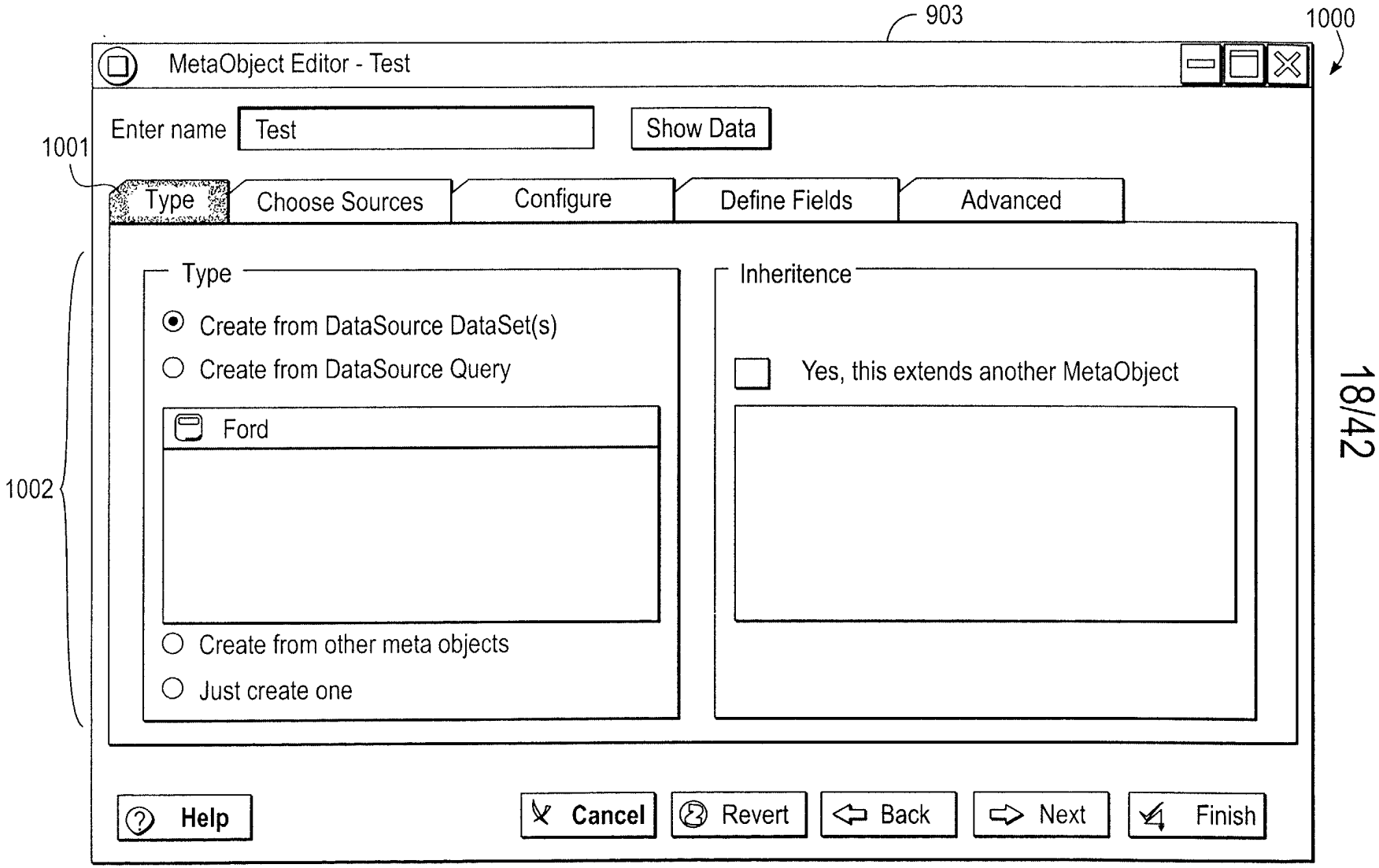
903
1000
MetaObject Editor - Test
Enter name
Test
Show Data
1001
Type
Choose Sources
Configure
Define Fields
Advanced
Type
Create from DataSource DataSet(s)
Create from DataSource Query
Ford
Create from other meta objects
Just create one
Inheritence
Yes, this extends another MetaObject
1002
Help
Cancel
Revert
Back
Next
Finish

Fig. 10A

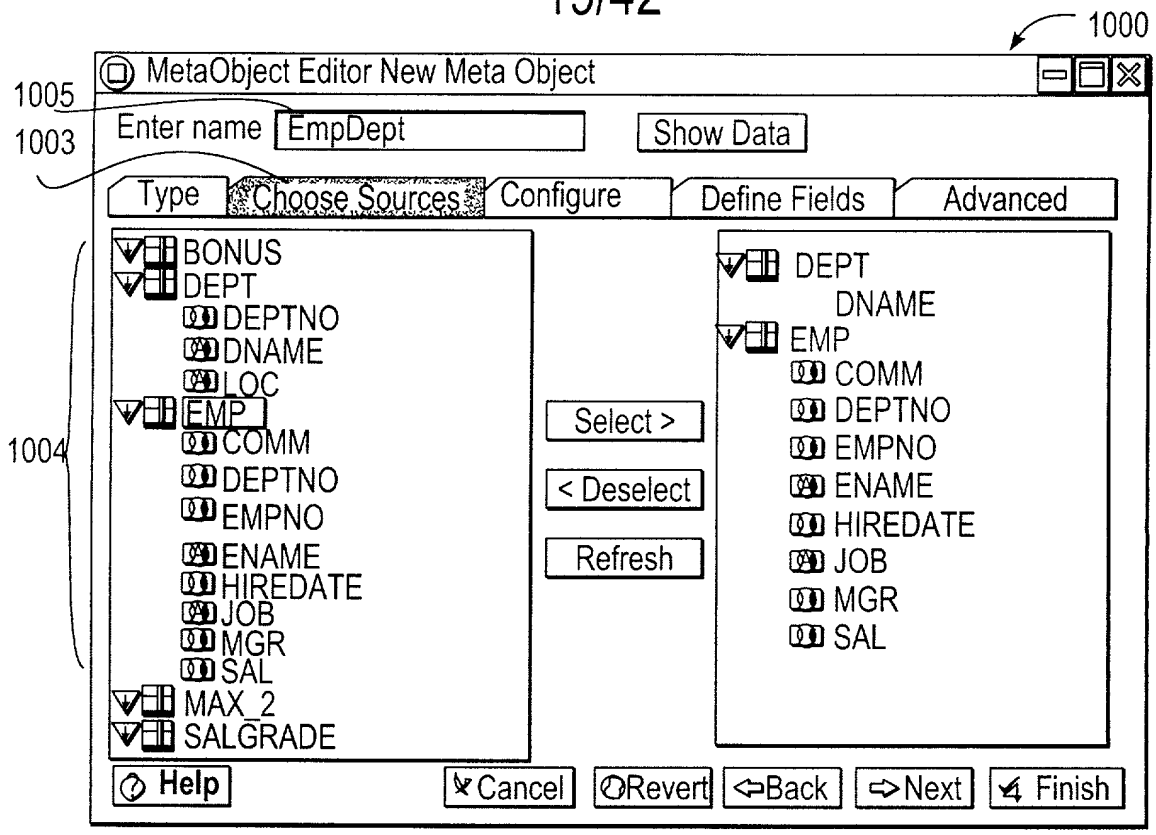

Fig. 10B

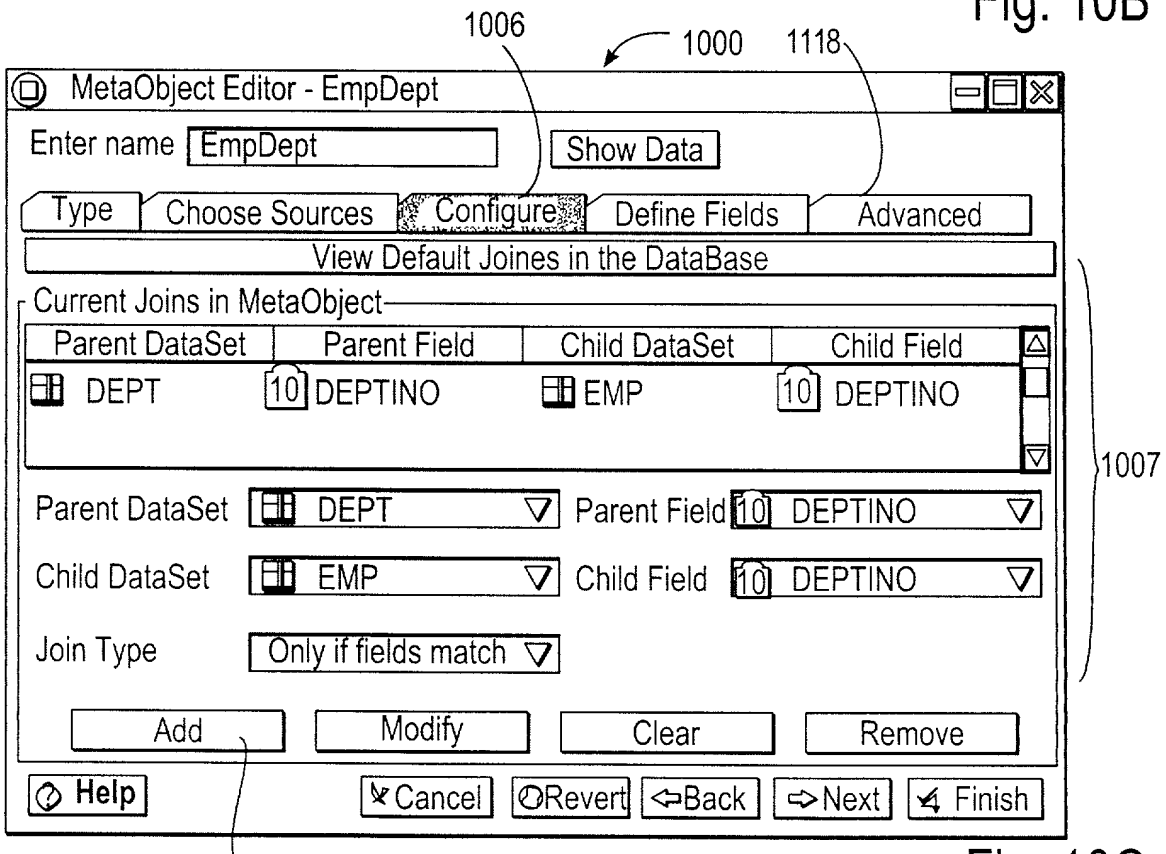

Fig. 10C

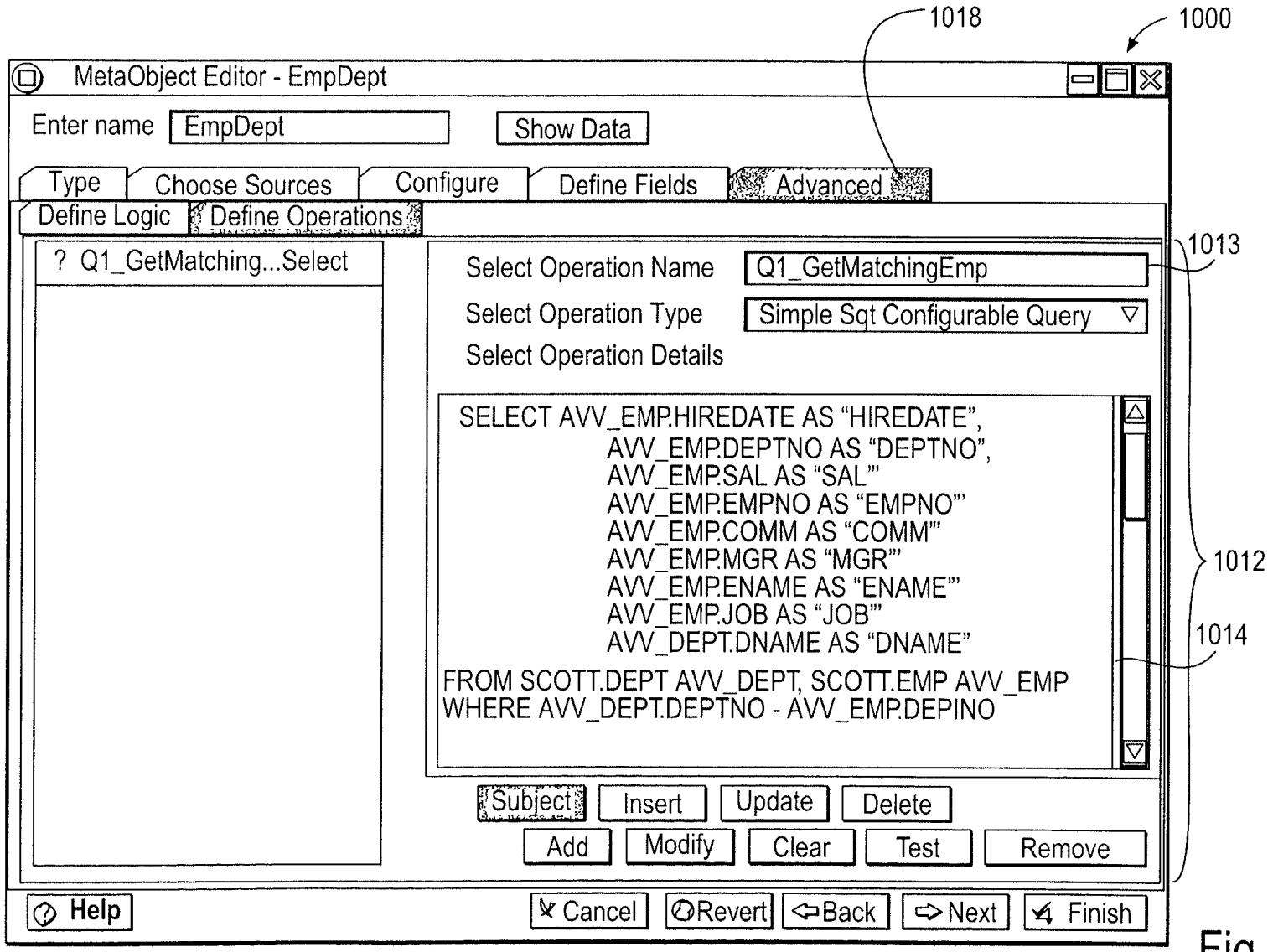
1018
1000
MetaObject Editor - EmpDept
Enter name
EmpDept
Show Data
Type
Choose Sources
Configure
Define Fields
Advanced
Define Logic
Define Operations
? Q1_GetMatching...Select
1013
Select Operation Name
Q1_GetMatchingEmp
Select Operation Type
Simple Sqt Configurable Query
Select Operation Details
SELECT AVV_EMP.HIREDATE AS "HIREDATE",
AVV_EMP.DEPTNO AS "DEPTNO",
AVV_EMP.SAL AS "SAL"'
AVV_EMP.EMPNO AS "EMPNO"'
AVV_EMP.COMM AS "COMM"'
AVV_EMP.MGR AS "MGR"'
AVV_EMP.ENAME AS "ENAME"'
AVV_EMP.JOB AS "JOB"'
AVV_DEPT.DNAME AS "DNAME"
FROM SCOTT.DEPT AVV_DEPT, SCOTT.EMP AVV_EMP
WHERE AVV_DEPT.DEPTNO - AVV_EMP.DEPINO
1012
1014
Subject
Insert
Update
Delete
Add
Modify
Clear
Test
Remove
Help
Cancel
Revert
Back
Next
Finish

Fig. 10D

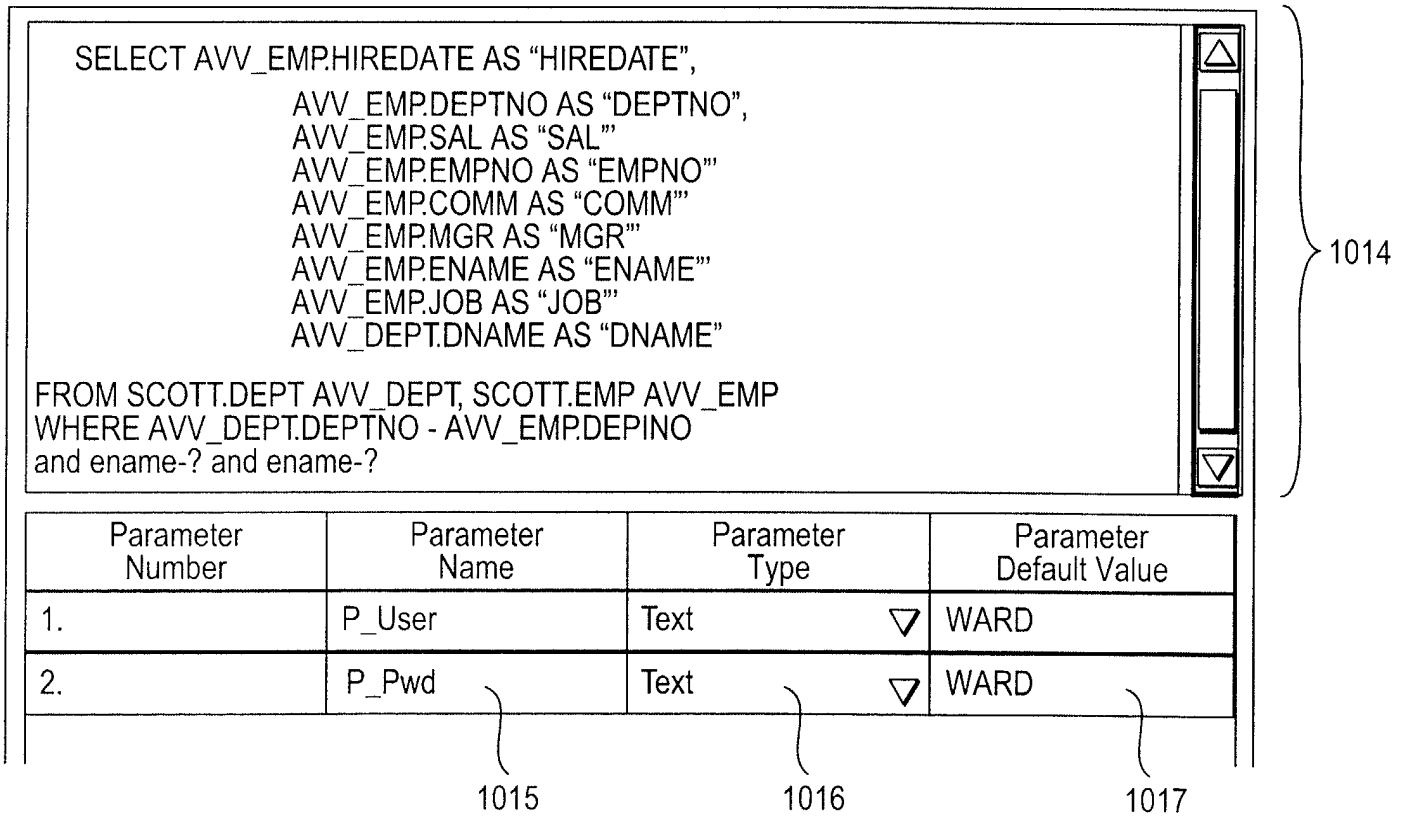
SELECT AVV_EMP.HIREDATE AS "HIREDATE",
AVV_EMP.DEPTNO AS "DEPTNO",
AVV_EMP.SAL AS "SAL"'
AVV_EMP.EMPNO AS "EMPNO"'
AVV_EMP.COMM AS "COMM"'
AVV_EMP.MGR AS "MGR"'
AVV_EMP.ENAME AS "ENAME"'
AVV_EMP.JOB AS "JOB"'
AVV_DEPT.DNAME AS "DNAME"
FROM SCOTT.DEPT AVV_DEPT, SCOTT.EMP AVV_EMP
WHERE AVV_DEPT.DEPTNO - AVV_EMP.DEPINO
and ename-? and ename-?
1014
Parameter Number
Parameter Name
Parameter Type
Parameter Default Value
1.
P_User
Text
WARD
2.
P_Pwd
Text
WARD
1015
1016
1017

Fig. 10E

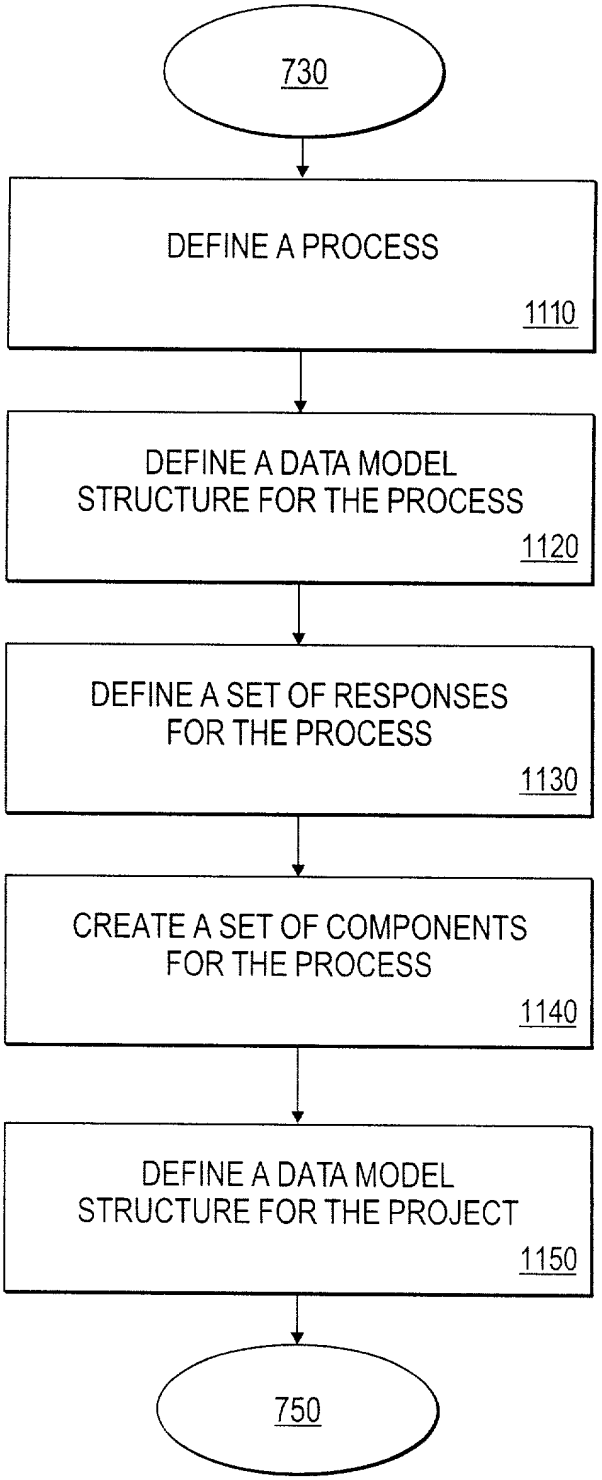
730
DEFINE A PROCESS
1110
DEFINE A DATA MODEL STRUCTURE FOR THE PROCESS
1120
DEFINE A SET OF RESPONSES FOR THE PROCESS
1130
CREATE A SET OF COMPONENTS FOR THE PROCESS
1140
DEFINE A DATA MODEL STRUCTURE FOR THE PROJECT
1150
750

Fig. 11

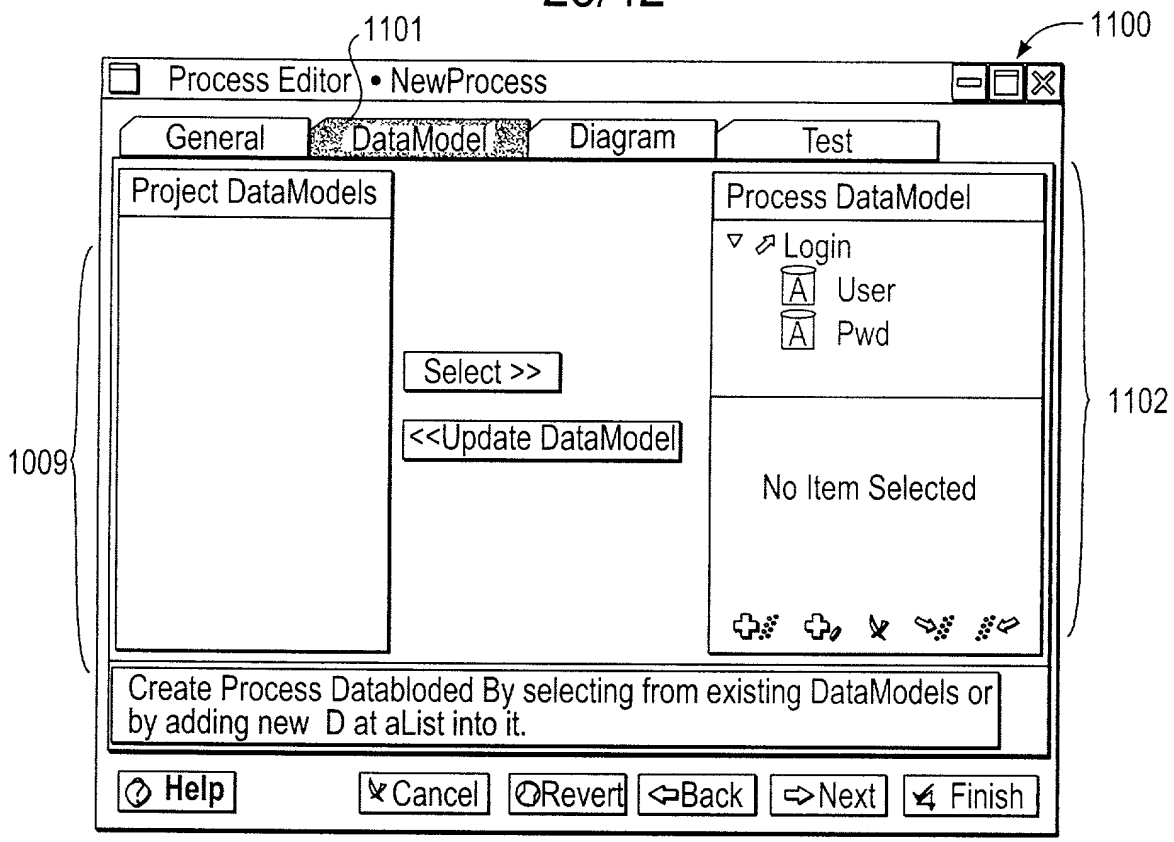

Fig. 11A

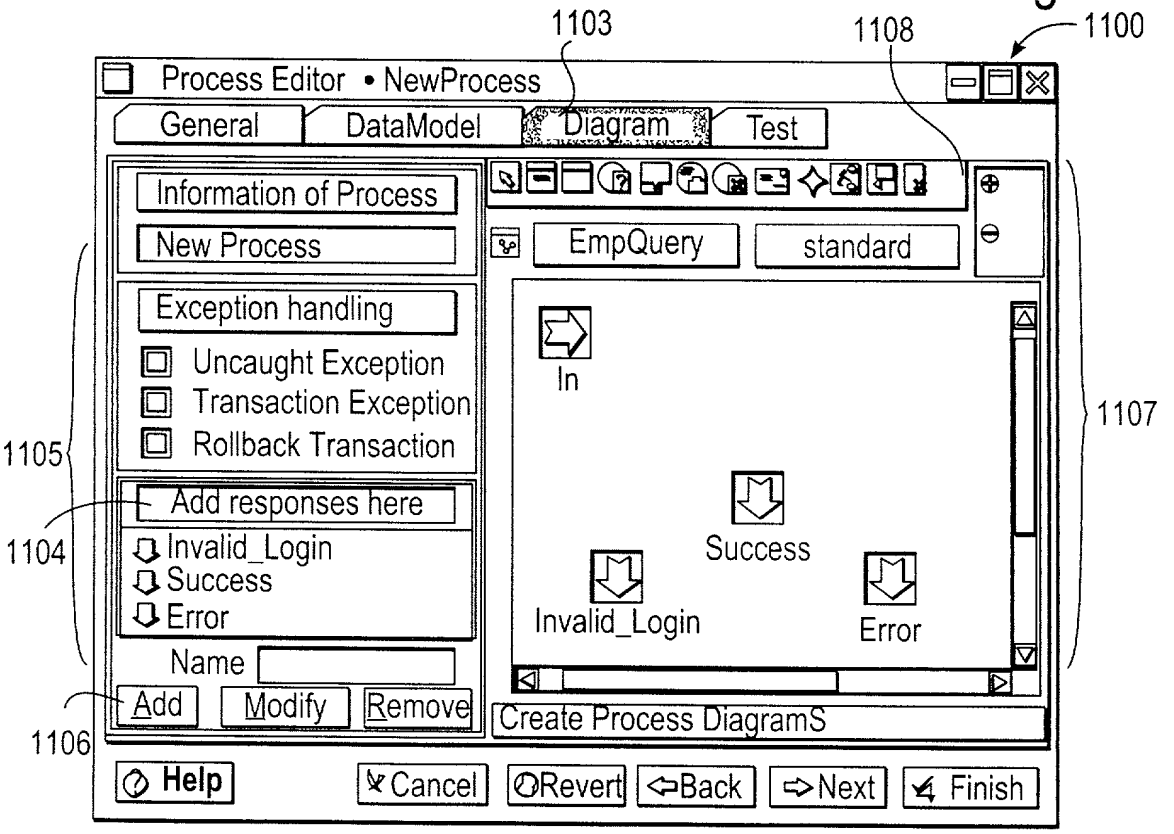

Fig. 11B

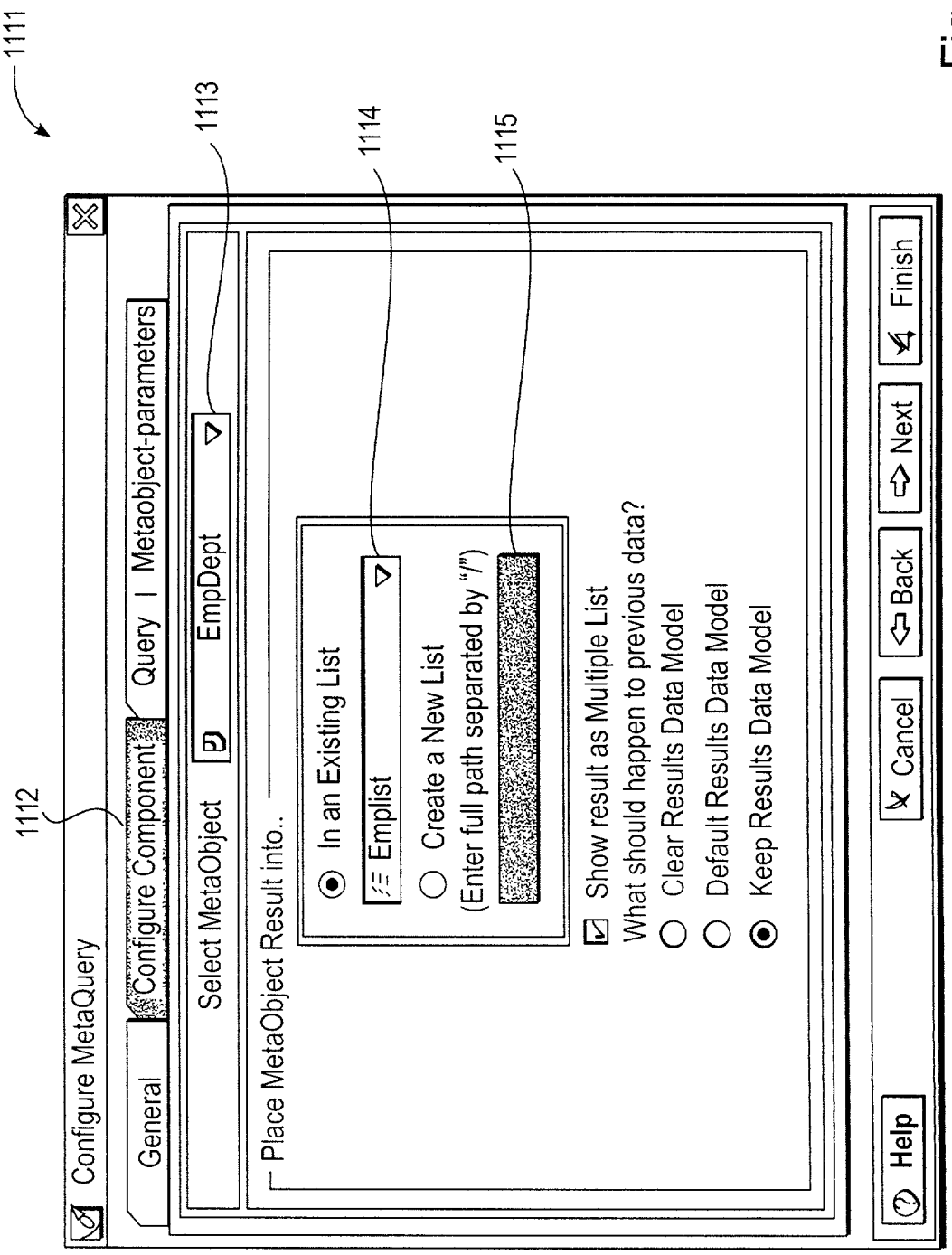
1111
1112
1113
1114
1115
Configure MetaQuery
General
Configure Component
Query I Metaobject-parameters
Select MetaObject
EmpDept
Place MetaObject Result into..
In an Existing List
Emplist
Create a New List
(Enter full path separated by "/")
Show result as Multiple List
What should happen to previous data?
Clear Results Data Model
Default Results Data Model
Keep Results Data Model
Help
Cancel
Back
Next
Finish

Fig. 11C

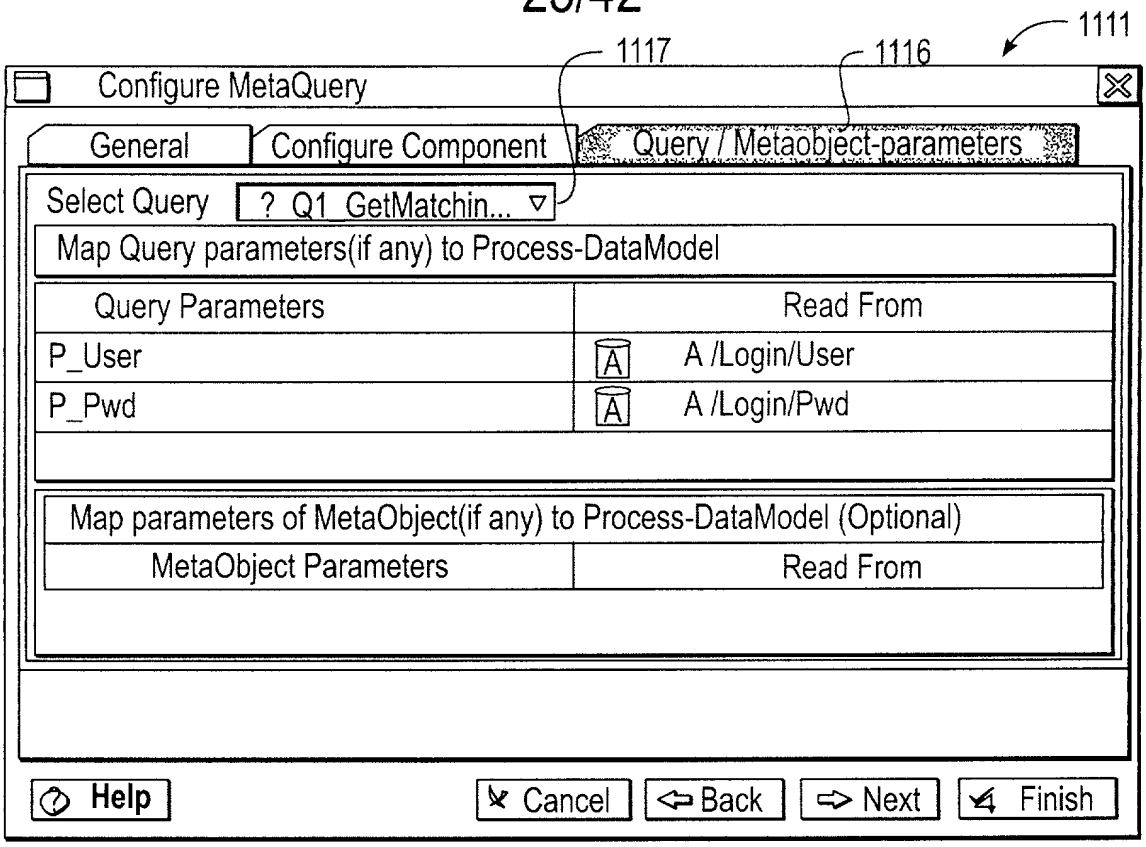

Fig. 11D

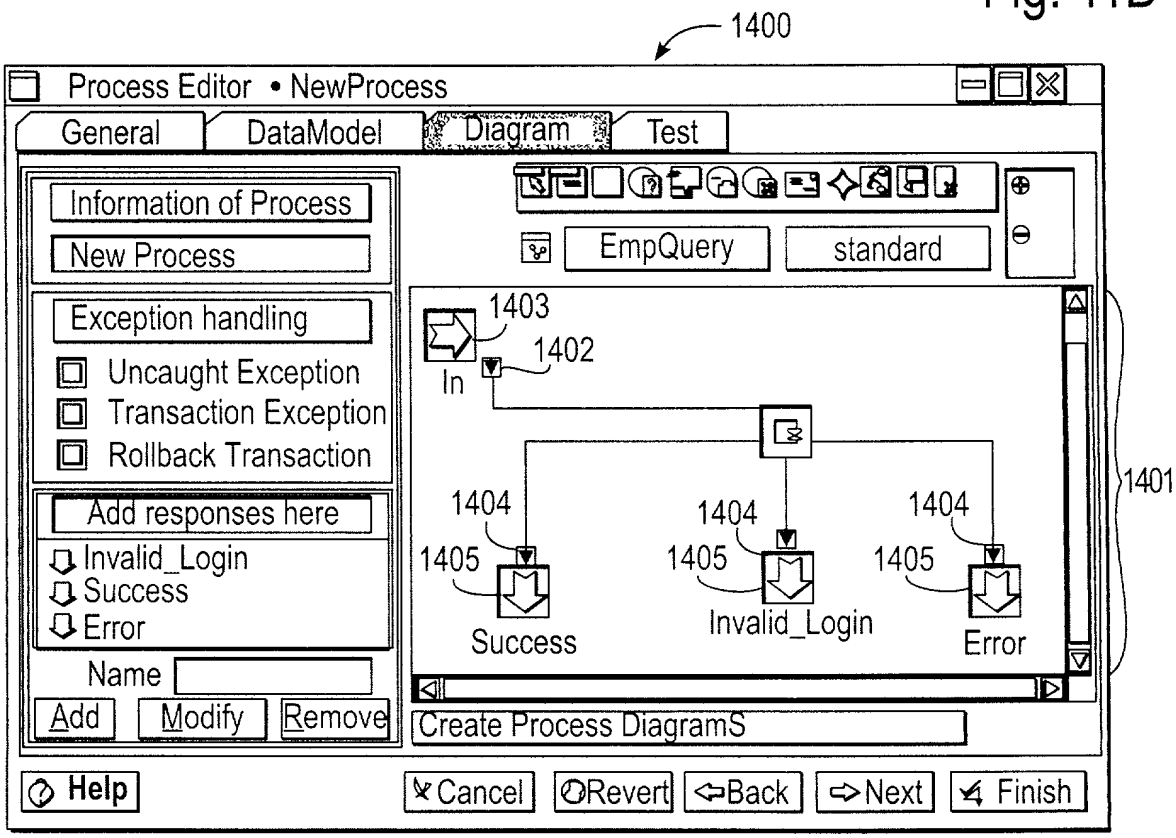

Fig. 11E

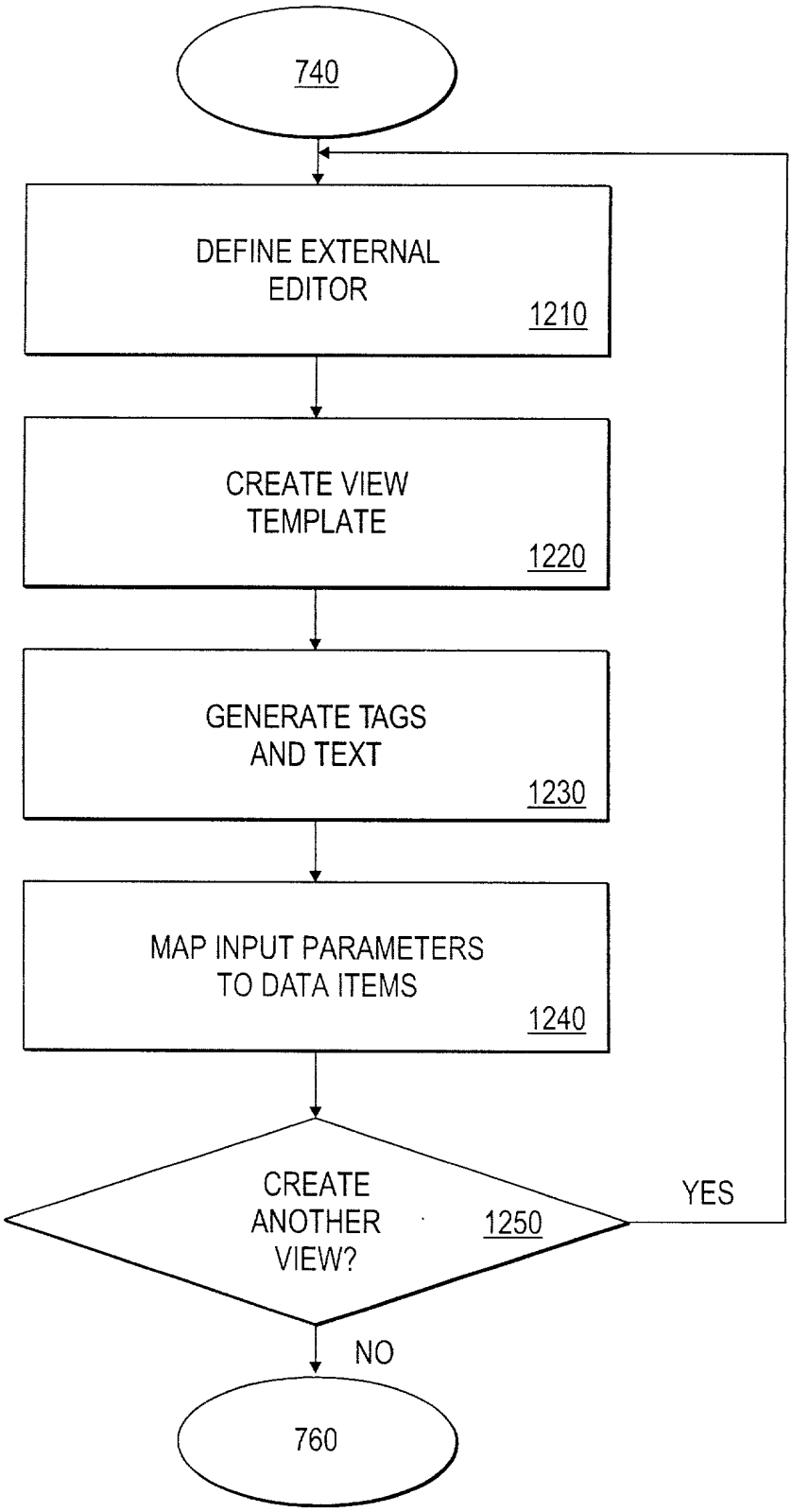
740
DEFINE EXTERNAL EDITOR
1210
CREATE VIEW TEMPLATE
1220
GENERATE TAGS AND TEXT
1230
MAP INPUT PARAMETERS TO DATA ITEMS
1240
CREATE ANOTHER VIEW?
1250
YES
NO
760

Fig. 12

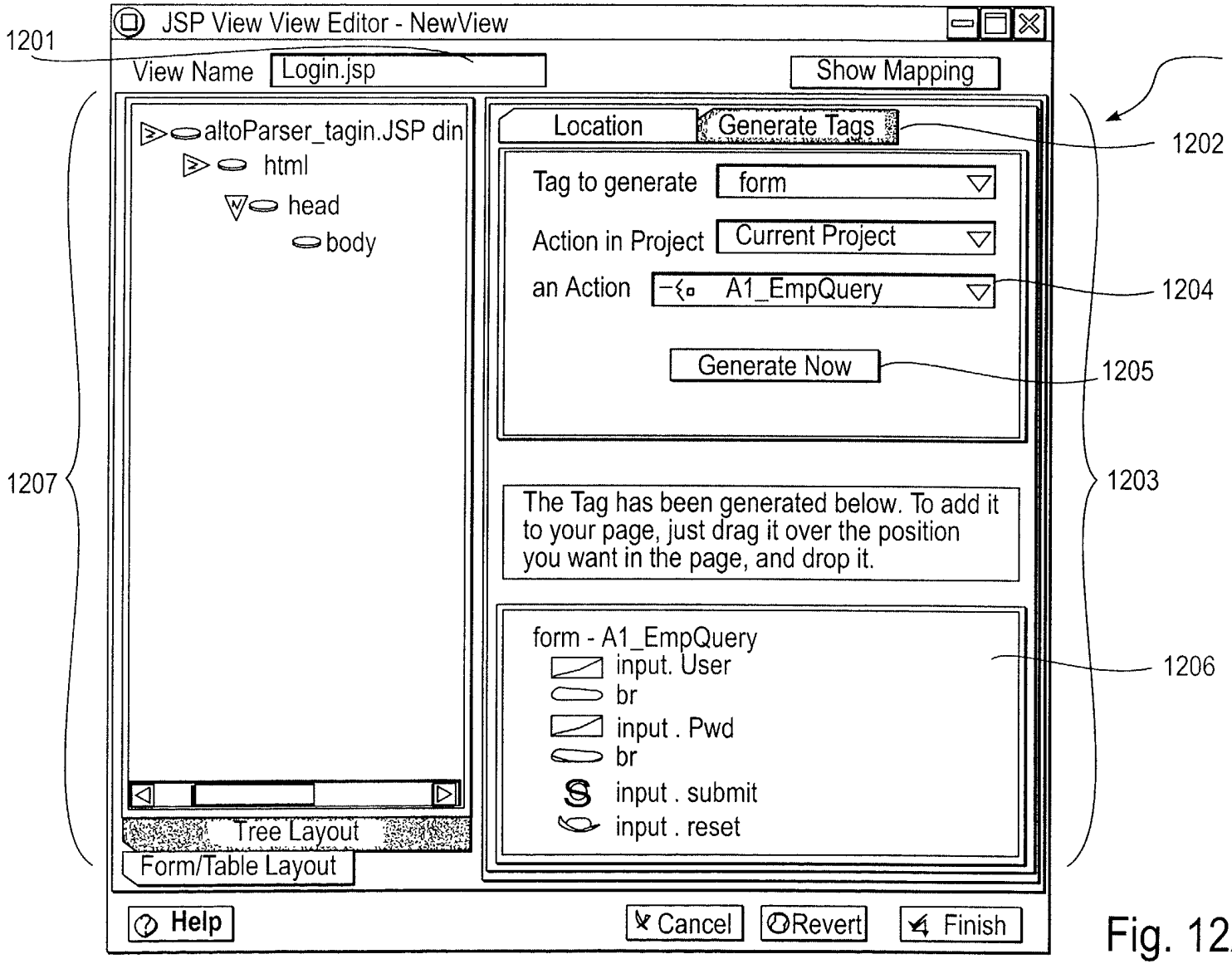
JSP View View Editor - NewView
View Name
Login.jsp
Show Mapping
altoParser_tagin.JSP din
html
head
body
Location
Generate Tags
Tag to generate
form
Action in Project
Current Project
an Action
A1_EmpQuery
Generate Now
The Tag has been generated below. To add it to your page, just drag it over the position you want in the page, and drop it.
form - A1_EmpQuery
input. User
br
input . Pwd
br
input . submit
input . reset
Tree Layout
Form/Table Layout
Help
Cancel
Revert
Finish
1201
1200
1202
1204
1205
1203
1207
1206

Fig. 12A

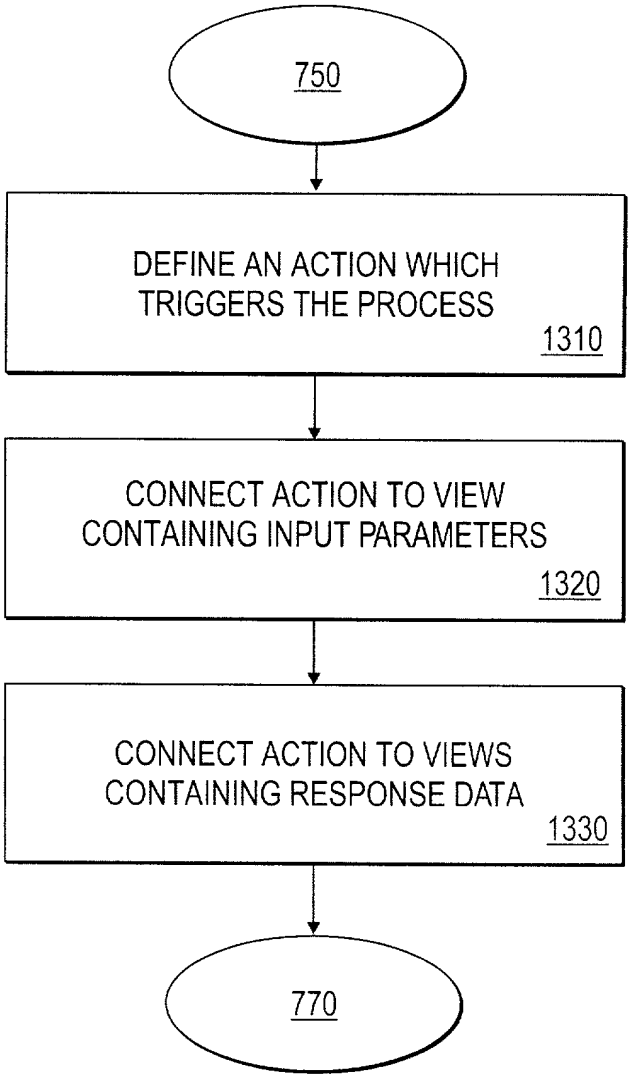
750
DEFINE AN ACTION WHICH TRIGGERS THE PROCESS
1310
CONNECT ACTION TO VIEW CONTAINING INPUT PARAMETERS
1320
CONNECT ACTION TO VIEWS CONTAINING RESPONSE DATA
1330
770

Fig. 13

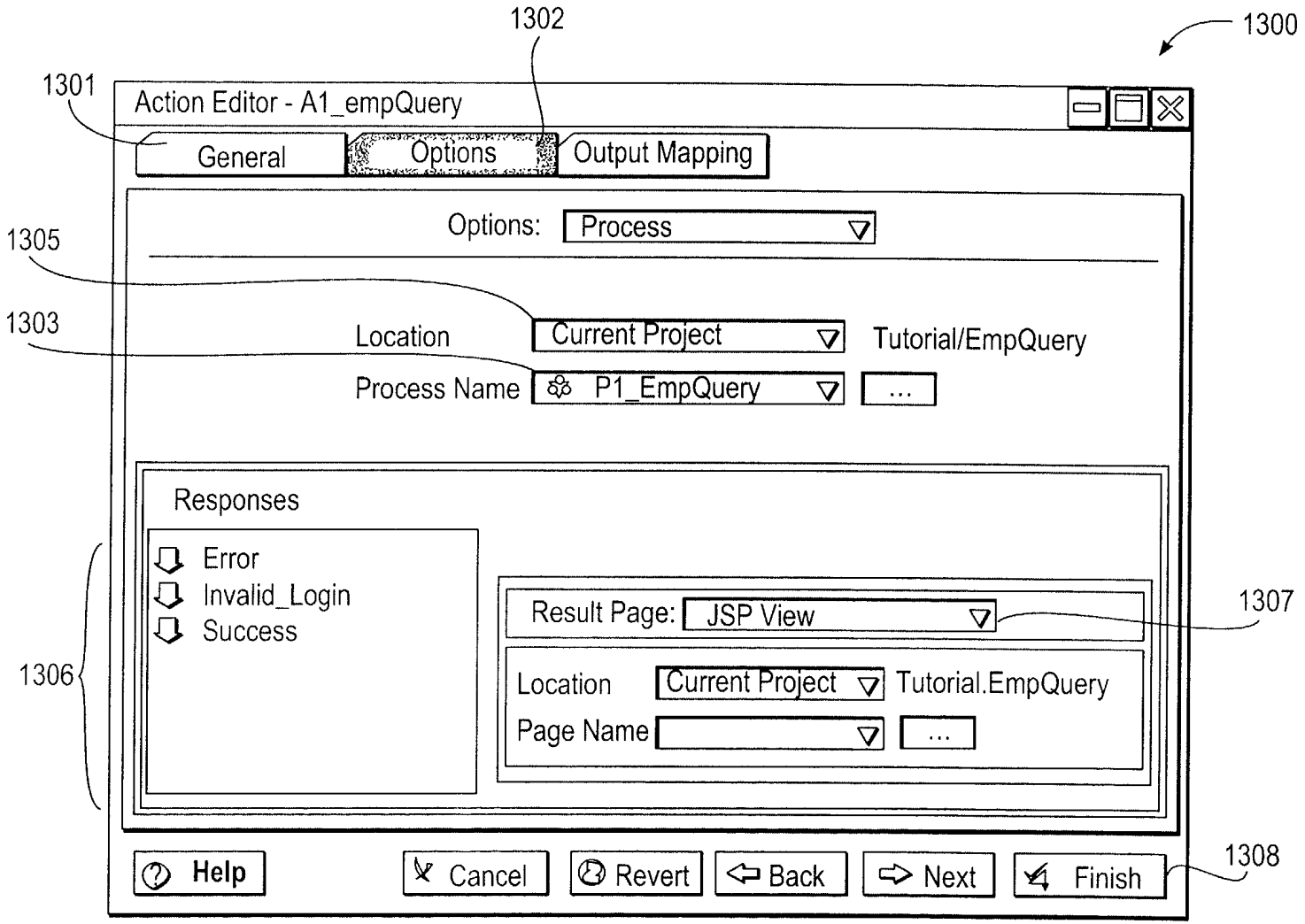
1300
1301
1302
Action Editor - A1_empQuery
General
Options
Output Mapping
Options: Process
1305
1303
Location
Current Project
Tutorial/EmpQuery
Process Name
P1_EmpQuery
...
Responses
Error
Invalid_Login
Success
1306
Result Page: JSP View
1307
Location
Current Project
Tutorial.EmpQuery
Page Name
...
Help
Cancel
Revert
Back
Next
Finish
1308

Fig. 13A

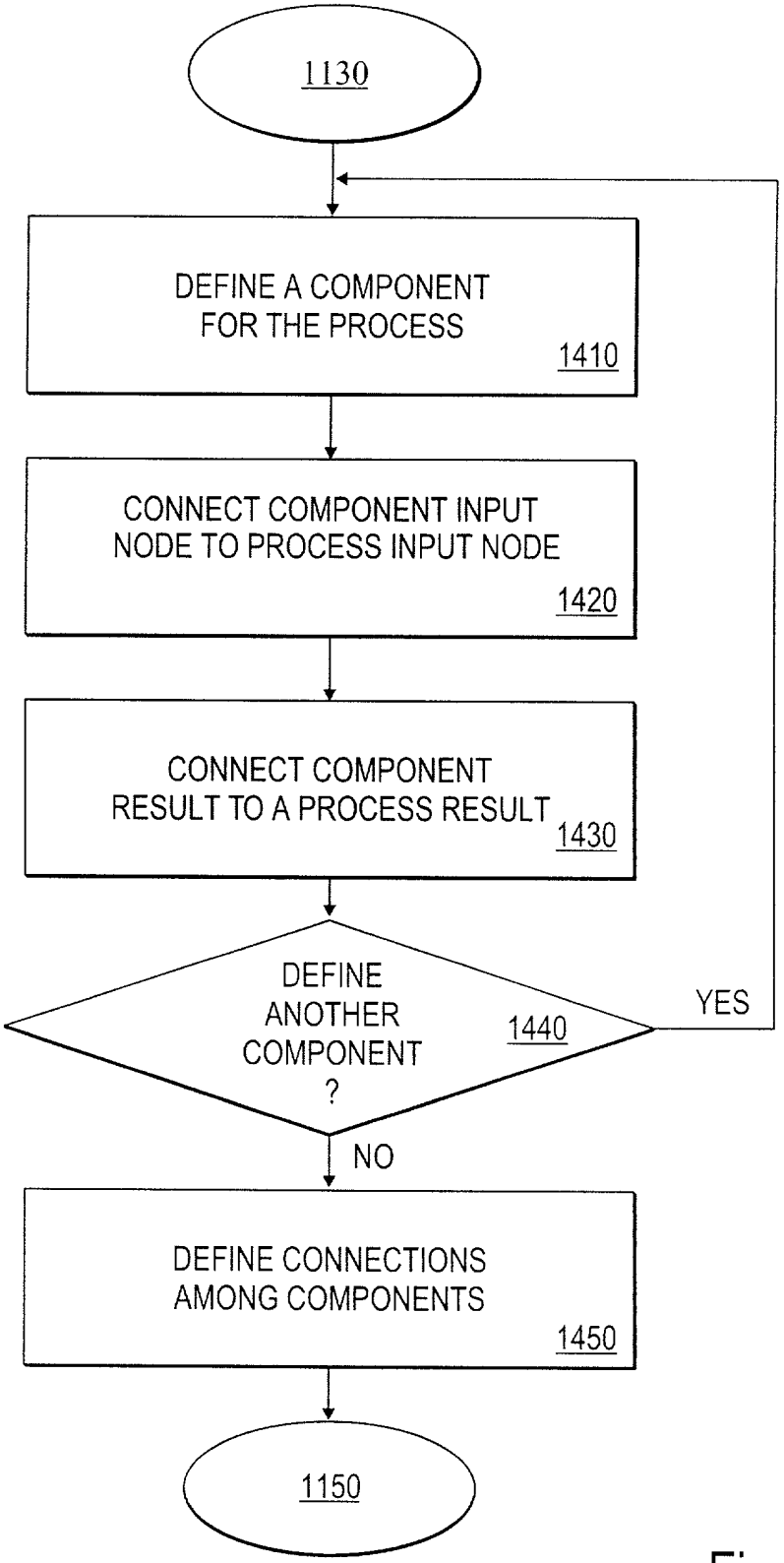
1130
DEFINE A COMPONENT FOR THE PROCESS
1410
CONNECT COMPONENT INPUT NODE TO PROCESS INPUT NODE
1420
CONNECT COMPONENT RESULT TO A PROCESS RESULT
1430
DEFINE ANOTHER COMPONENT ?
1440
YES
NO
DEFINE CONNECTIONS AMONG COMPONENTS
1450
1150

Fig. 14

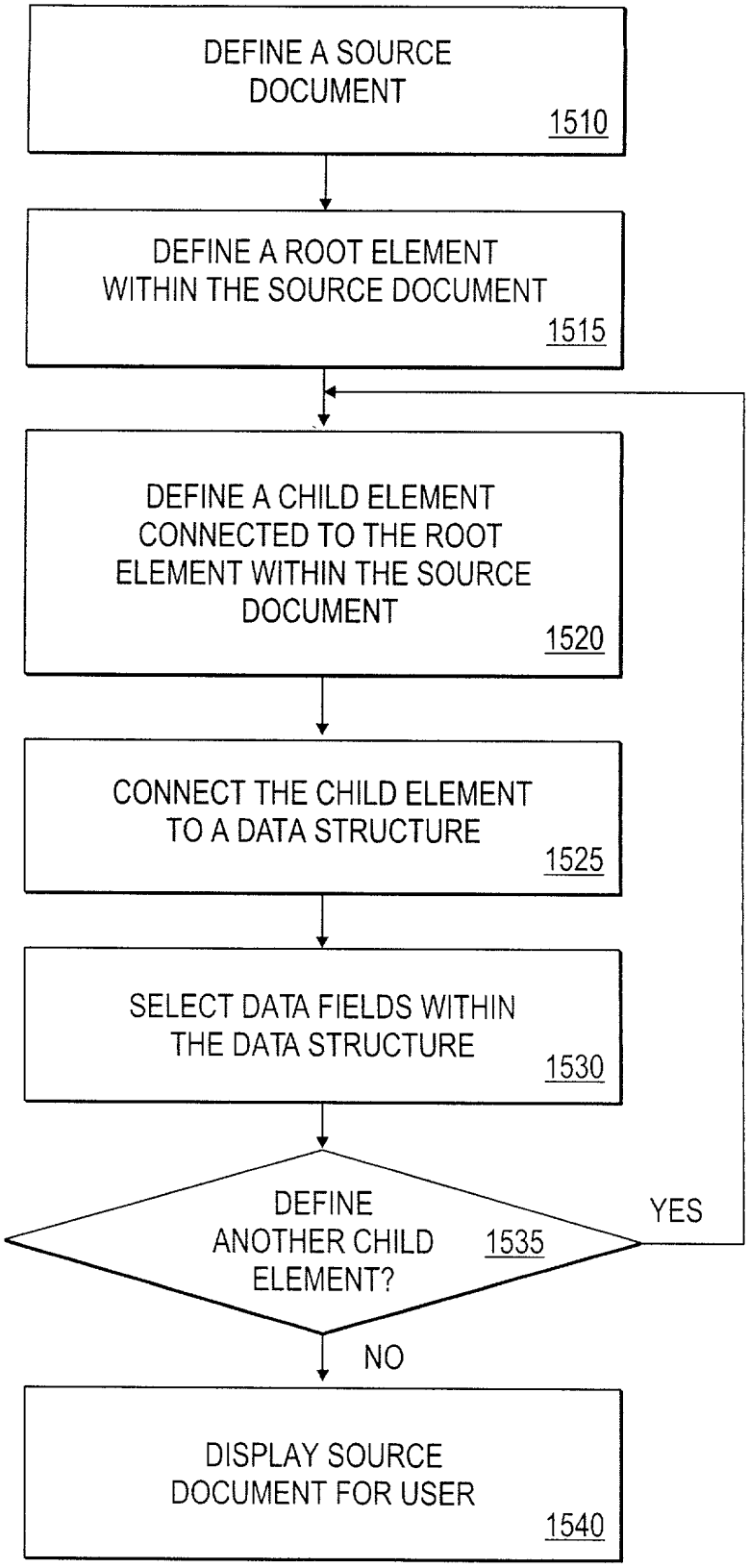
DEFINE A SOURCE DOCUMENT
1510
DEFINE A ROOT ELEMENT WITHIN THE SOURCE DOCUMENT
1515
DEFINE A CHILD ELEMENT CONNECTED TO THE ROOT ELEMENT WITHIN THE SOURCE DOCUMENT
1520
CONNECT THE CHILD ELEMENT TO A DATA STRUCTURE
1525
SELECT DATA FIELDS WITHIN THE DATA STRUCTURE
1530
DEFINE ANOTHER CHILD ELEMENT?
1535
YES
NO
DISPLAY SOURCE DOCUMENT FOR USER
1540

Fig. 15

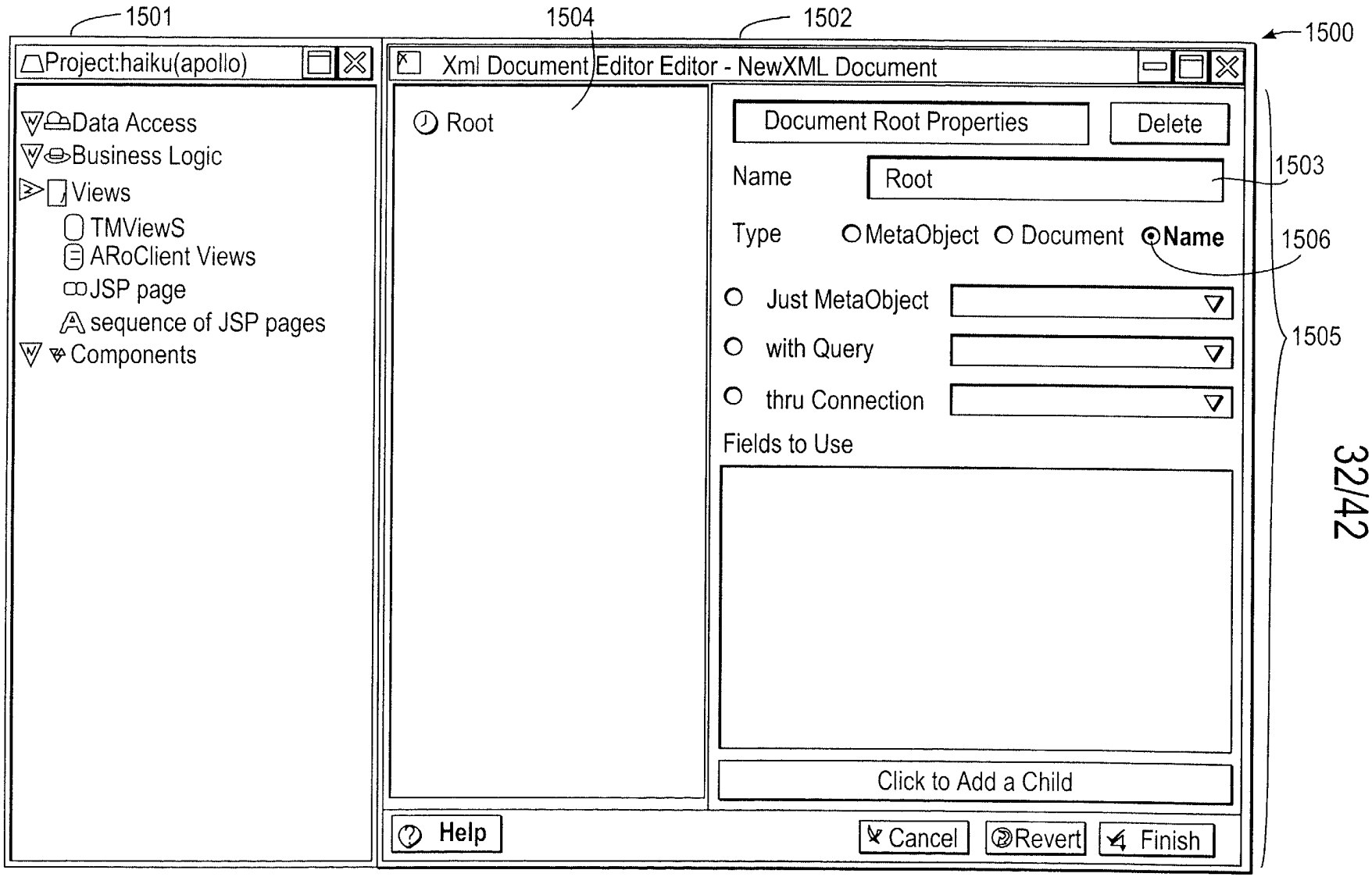
1501
1504
1502
1500
Project:haiku(apollo)
Data Access
Business Logic
Views
TMViewS
ARoClient Views
JSP page
sequence of JSP pages
Components
Xml Document Editor Editor - NewXML Document
Root
Document Root Properties
Delete
Name
Root
1503
Type
MetaObject
Document
Name
1506
Just MetaObject
with Query
thru Connection
1505
Fields to Use
Click to Add a Child
Help
Cancel
Revert
Finish

Fig. 15A

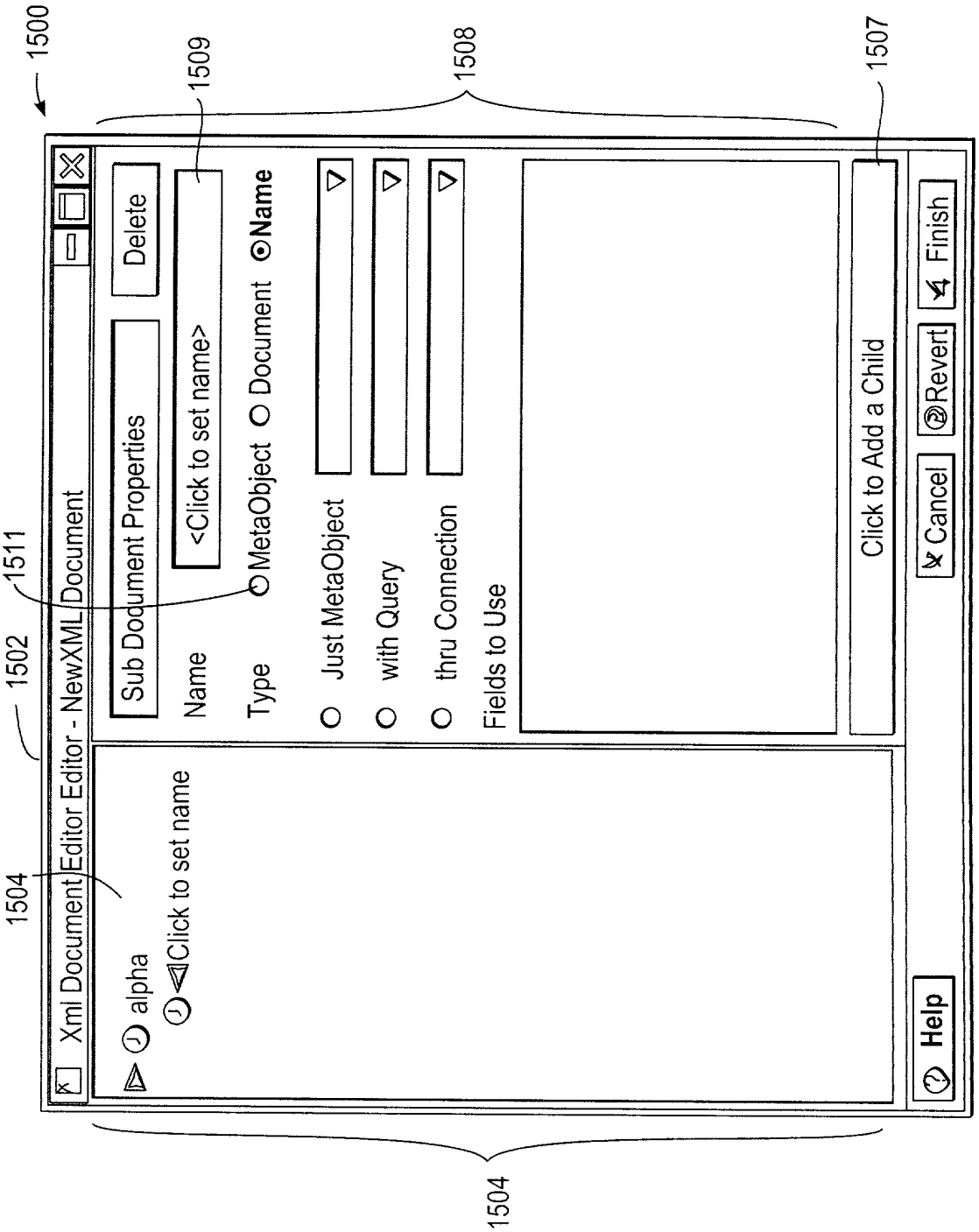
1500
1509
1508
1507
1511
1502
1504
Xml Document Editor Editor - NewXML Document
alpha
Click to set name
Sub Dodument Properties
Delete
Name
<Click to set name>
Type
MetaObject
Document
Name
Just MetaObject
with Query
thru Connection
Fields to Use
Click to Add a Child
Help
Cancel
Revert
Finish
1504

Fig. 15B

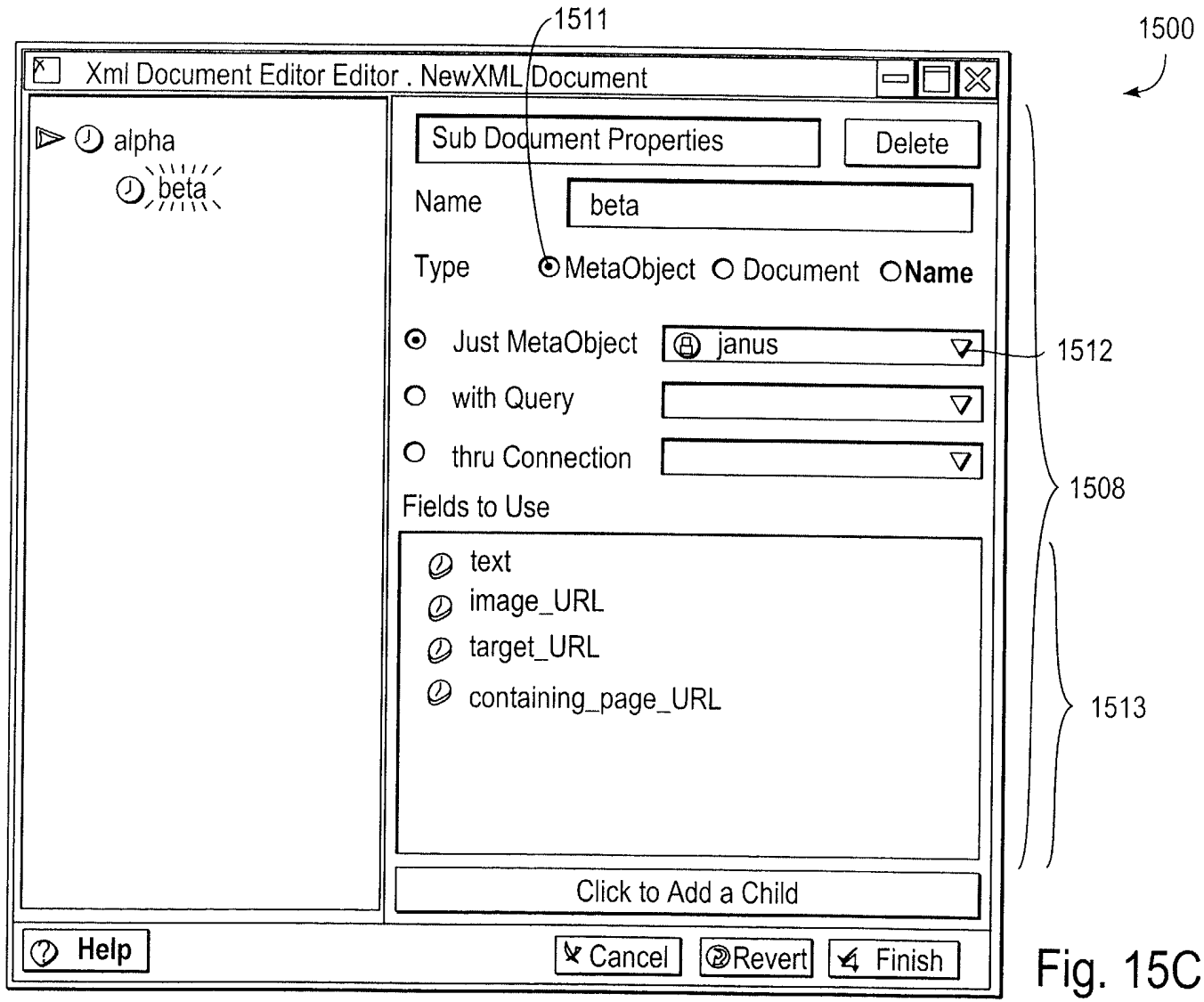
1511
1500
Xml Document Editor Editor . NewXML Document
alpha
beta
Sub Document Properties
Delete
Name
beta
Type
MetaObject
Document
Name
Just MetaObject
janus
1512
with Query
thru Connection
1508
Fields to Use
text
image_URL
target_URL
containing_page_URL
1513
Click to Add a Child
Help
Cancel
Revert
Finish

Fig. 15C

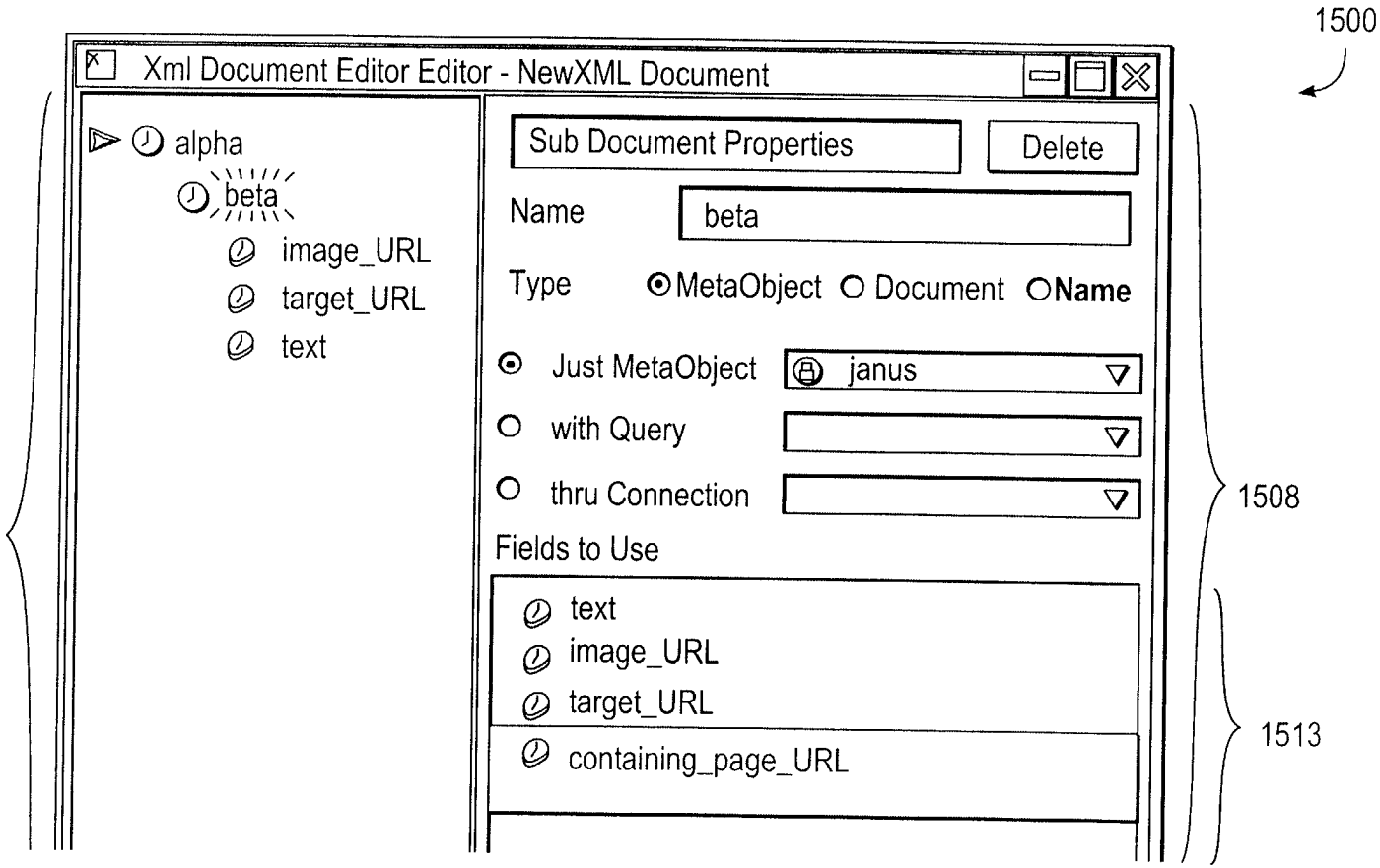
1500
Xml Document Editor Editor - NewXML Document
alpha
beta
image_URL
target_URL
text
Sub Document Properties
Delete
Name
beta
Type
MetaObject
Document
Name
Just MetaObject
janus
with Query
thru Connection
Fields to Use
text
image_URL
target_URL
containing_page_URL
1508
1513

Fig. 15D

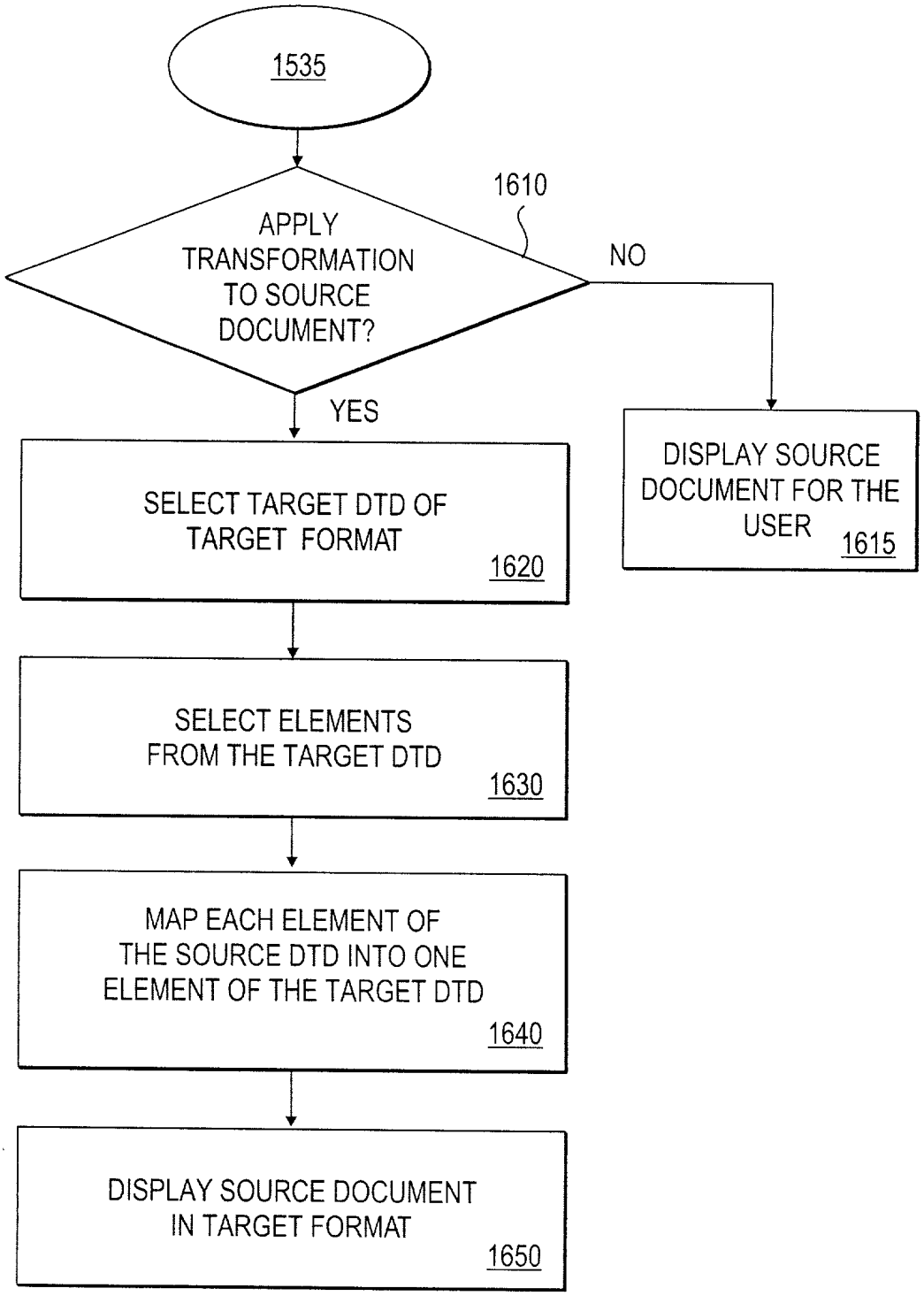
1535
1610
APPLY TRANSFORMATION TO SOURCE DOCUMENT?
NO
YES
DISPLAY SOURCE DOCUMENT FOR THE USER
1615
SELECT TARGET DTD OF TARGET FORMAT
1620
SELECT ELEMENTS FROM THE TARGET DTD
1630
MAP EACH ELEMENT OF THE SOURCE DTD INTO ONE ELEMENT OF THE TARGET DTD
1640
DISPLAY SOURCE DOCUMENT IN TARGET FORMAT
1650

Fig. 16

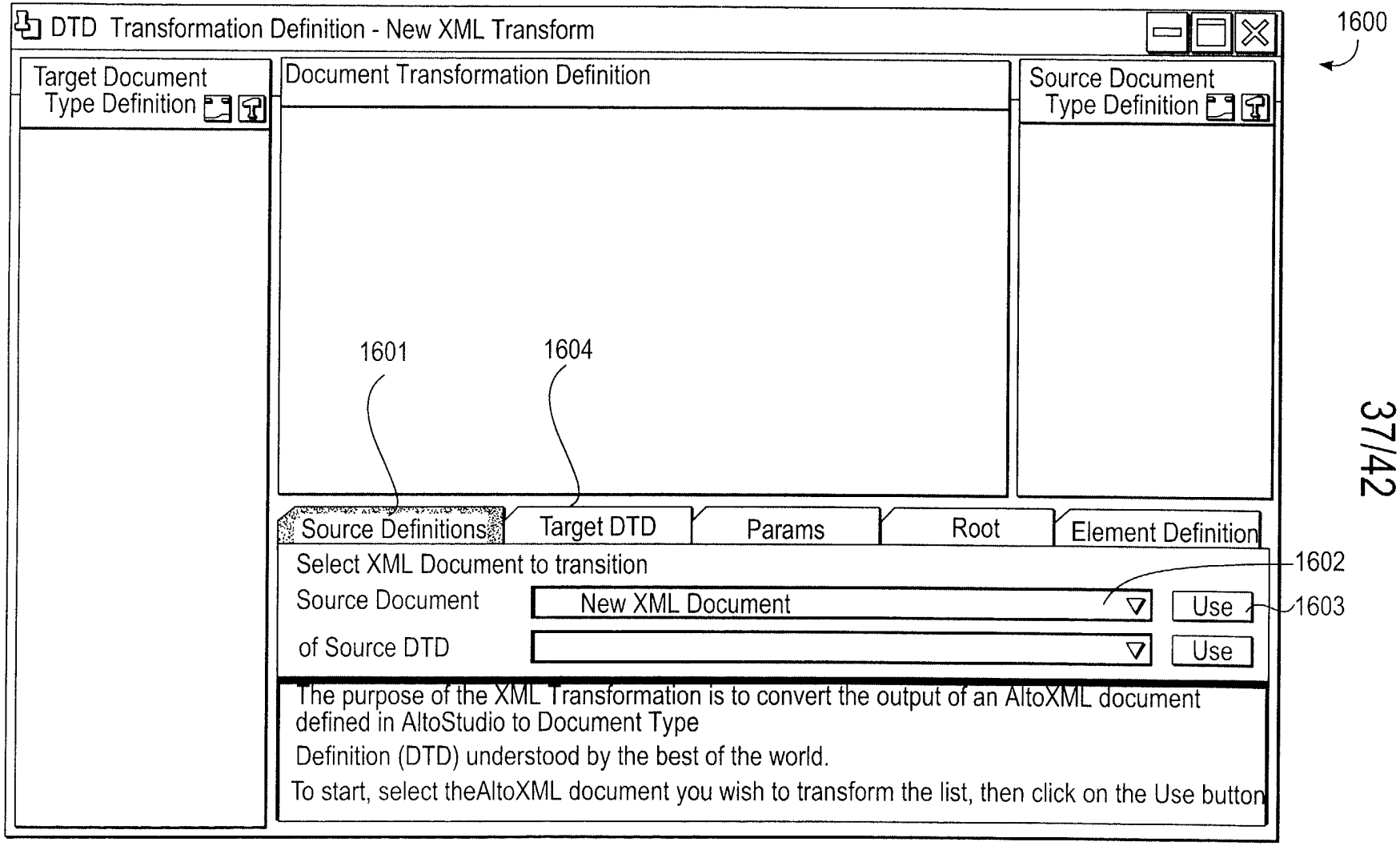
DTD Transformation Definition - New XML Transform
1600
Target Document Type Definition
Document Transformation Definition
Source Document Type Definition
1601
1604
Source Definitions
Target DTD
Params
Root
Element Definition
Select XML Document to transition
1602
Source Document
New XML Document
Use
1603
of Source DTD
Use
The purpose of the XML Transformation is to convert the output of an AltoXML document defined in AltoStudio to Document Type
Definition (DTD) understood by the best of the world.
To start, select theAltoXML document you wish to transform the list, then click on the Use button

Fig. 16A

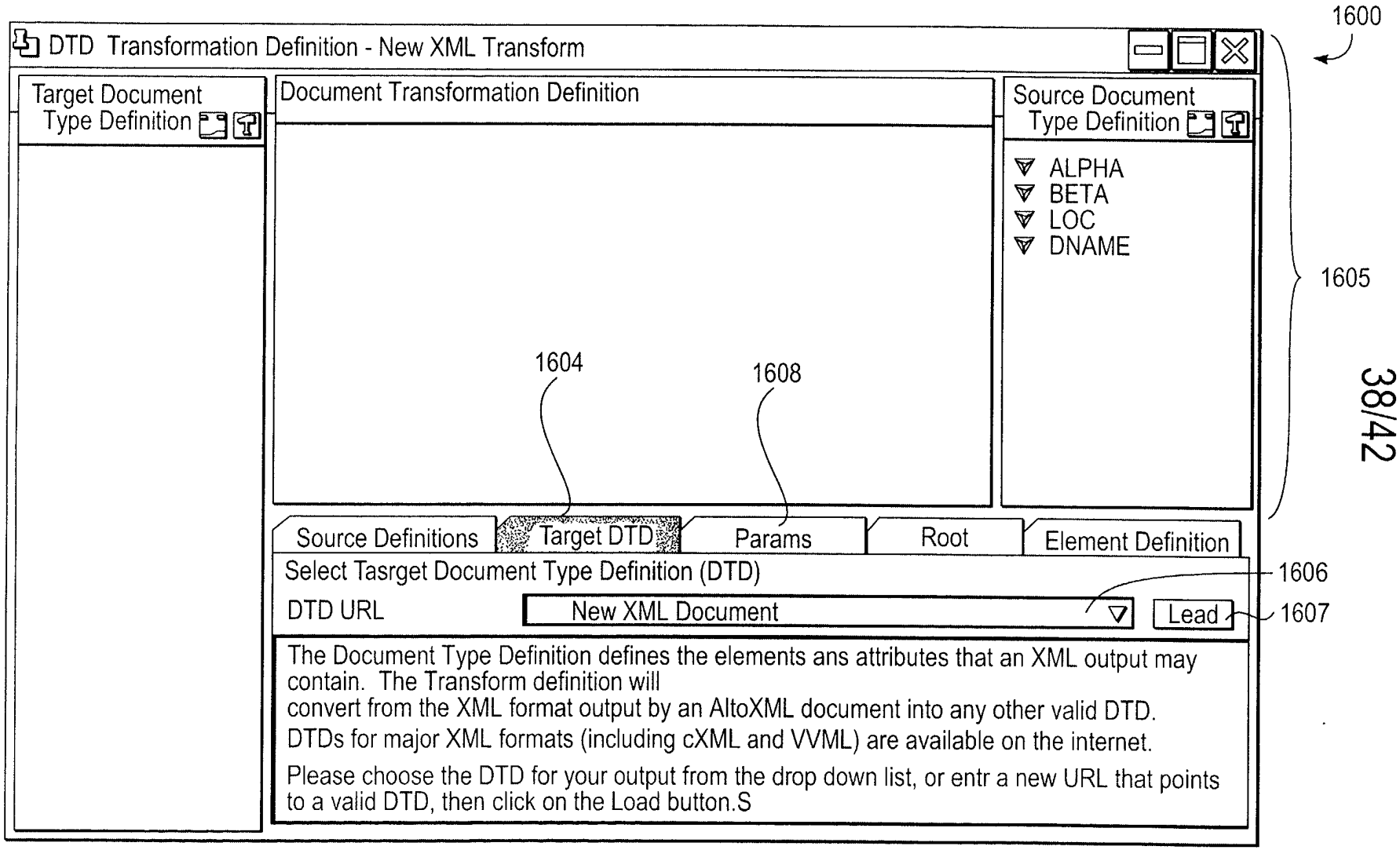
1600
DTD Transformation Definition - New XML Transform
Target Document Type Definition
Document Transformation Definition
Source Document Type Definition
ALPHA
BETA
LOC
DNAME
1605
1604
1608
Source Definitions
Target DTD
Params
Root
Element Definition
Select Tasrget Document Type Definition (DTD)
1606
DTD URL
New XML Document
Lead
1607
The Document Type Definition defines the elements ans attributes that an XML output may contain. The Transform definition will
convert from the XML format output by an AltoXML document into any other valid DTD.
DTDs for major XML formats (including cXML and VVML) are available on the internet.
Please choose the DTD for your output from the drop down list, or entr a new URL that points to a valid DTD, then click on the Load button.S

Fig. 16B

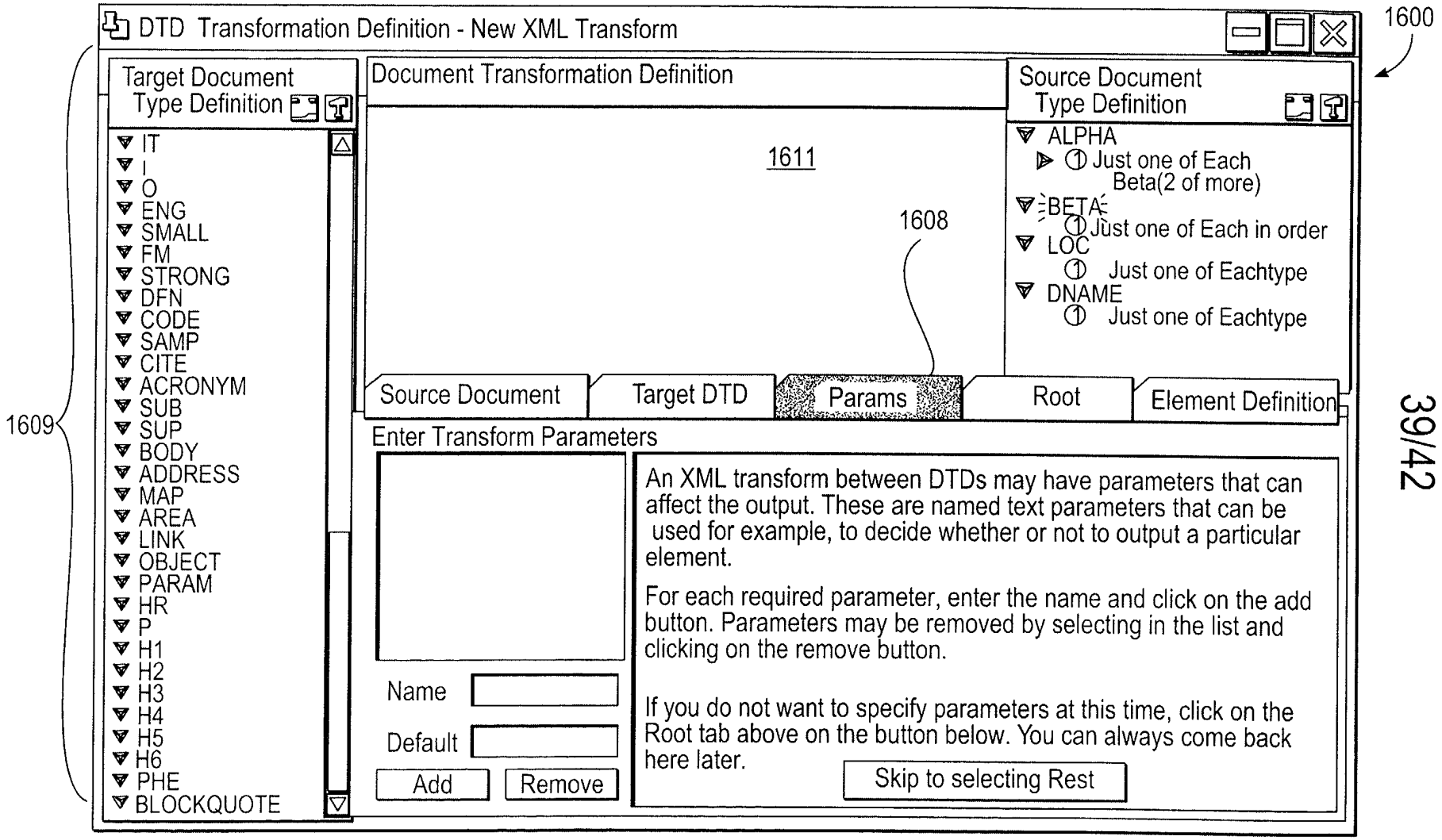
DTD Transformation Definition - New XML Transform
1600
Target Document Type Definition
Document Transformation Definition
Source Document Type Definition
1611
1608
1609
IT
I
O
ENG
SMALL
FM
STRONG
DFN
CODE
SAMP
CITE
ACRONYM
SUB
SUP
BODY
ADDRESS
MAP
AREA
LINK
OBJECT
PARAM
HR
P
H1
H2
H3
H4
H5
H6
PHE
BLOCKQUOTE
ALPHA
① Just one of Each
Beta(2 of more)
BETA
① Just one of Each in order
LOC
① Just one of Eachtype
DNAME
① Just one of Eachtype
Source Document
Target DTD
Params
Root
Element Definition
Enter Transform Parameters
Name
Default
Add
Remove
An XML transform between DTDs may have parameters that can affect the output. These are named text parameters that can be used for example, to decide whether or not to output a particular element.
For each required parameter, enter the name and click on the add button. Parameters may be removed by selecting in the list and clicking on the remove button.
If you do not want to specify parameters at this time, click on the Root tab above on the button below. You can always come back here later.
Skip to selecting Rest

Fig. 16C

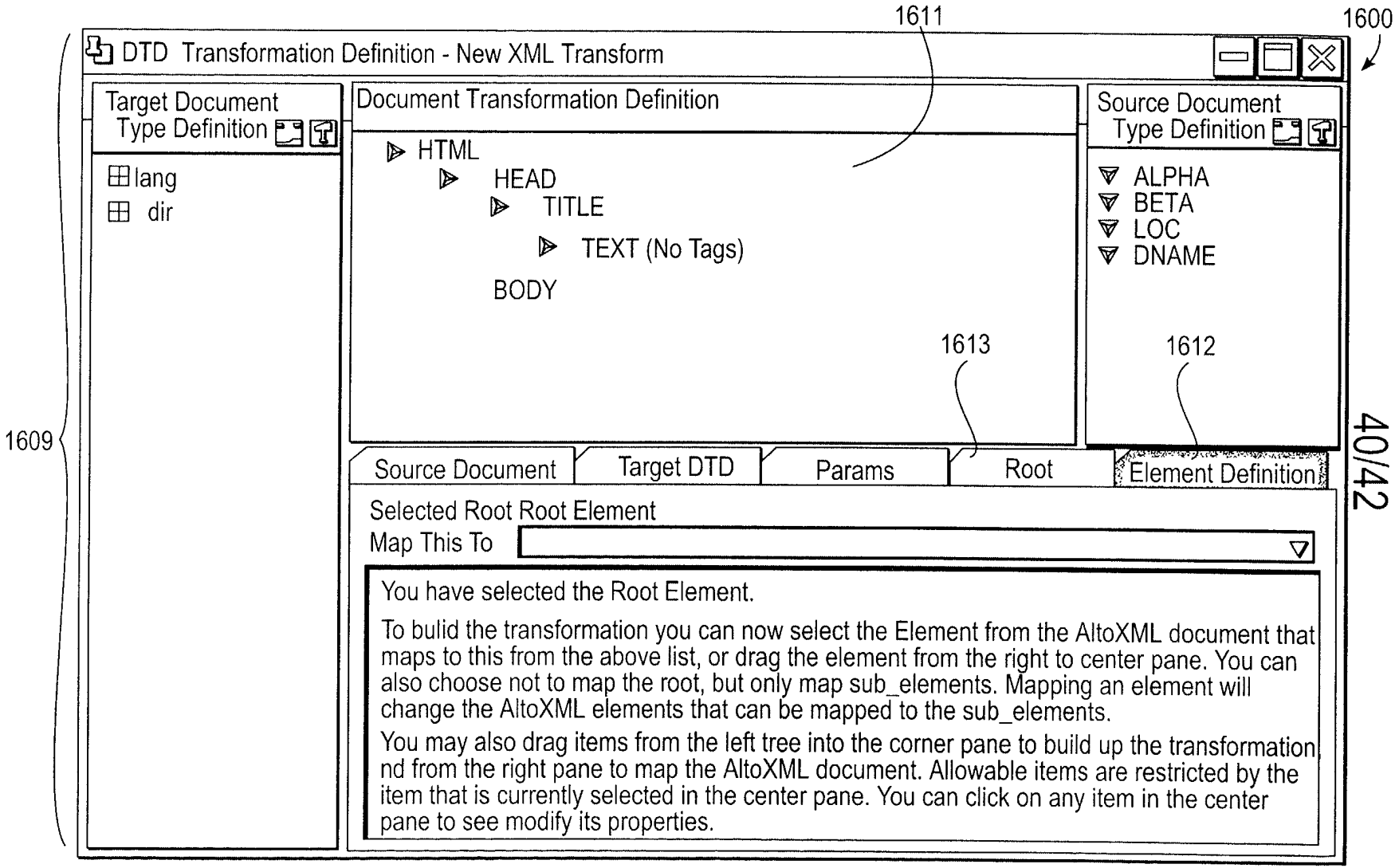
1611
1600
DTD Transformation Definition - New XML Transform
Target Document Type Definition
lang
dir
Document Transformation Definition
HTML
HEAD
TITLE
TEXT (No Tags)
BODY
Source Document Type Definition
ALPHA
BETA
LOC
DNAME
1613
1612
1609
Source Document
Target DTD
Params
Root
Element Definition
Selected Root Root Element
Map This To
You have selected the Root Element.
To bulid the transformation you can now select the Element from the AltoXML document that maps to this from the above list, or drag the element from the right to center pane. You can also choose not to map the root, but only map sub_elements. Mapping an element will change the AltoXML elements that can be mapped to the sub_elements.
You may also drag items from the left tree into the corner pane to build up the transformation nd from the right pane to map the AltoXML document. Allowable items are restricted by the item that is currently selected in the center pane. You can click on any item in the center pane to see modify its properties.
40/42

Fig. 16D

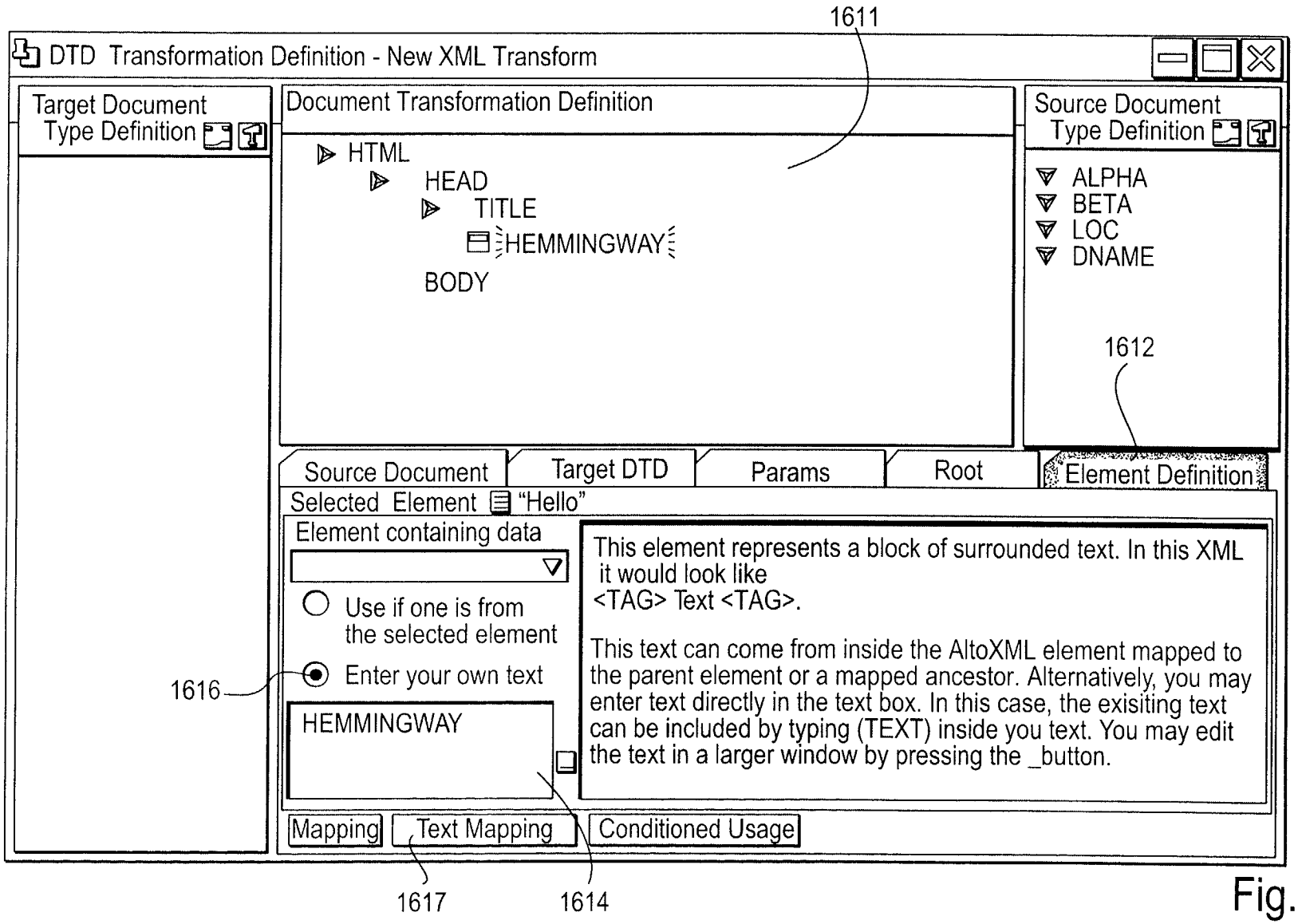
1611
1600
DTD Transformation Definition - New XML Transform
Target Document Type Definition
Document Transformation Definition
HTML
HEAD
TITLE
HEMMINGWAY
BODY
Source Document Type Definition
ALPHA
BETA
LOC
DNAME
1612
Source Document
Target DTD
Params
Root
Element Definition
Selected Element "Hello"
Element containing data
Use if one is from the selected element
Enter your own text
1616
HEMMINGWAY
This element represents a block of surrounded text. In this XML it would look like
<TAG> Text <TAG>.
This text can come from inside the AltoXML element mapped to the parent element or a mapped ancestor. Alternatively, you may enter text directly in the text box. In this case, the exisiting text can be included by typing (TEXT) inside you text. You may edit the text in a larger window by pressing the _button.
Mapping
Text Mapping
Conditioned Usage
1617
1614

Fig. 16E

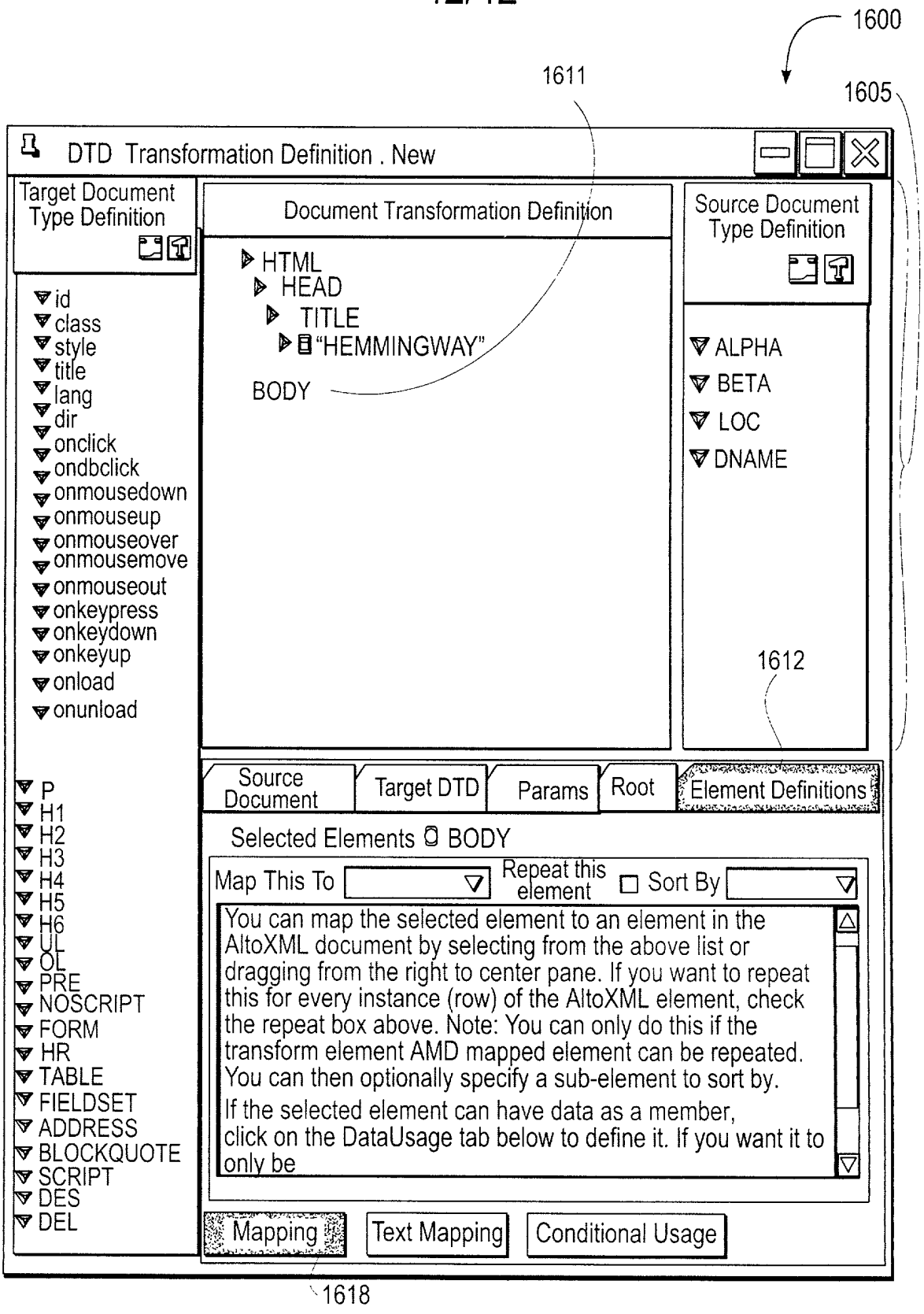
1600
1611
1605
DTD Transformation Definition . New
Target Document Type Definition
Document Transformation Definition
Source Document Type Definition
HTML
HEAD
TITLE
"HEMMINGWAY"
BODY
id
class
style
title
lang
dir
onclick
ondbclick
onmousedown
onmouseup
onmouseover
onmousemove
onmouseout
onkeypress
onkeydown
onkeyup
onload
onunload
ALPHA
BETA
LOC
DNAME
1612
P
H1
H2
H3
H4
H5
H6
UL
OL
PRE
NOSCRIPT
FORM
HR
TABLE
FIELDSET
ADDRESS
BLOCKQUOTE
SCRIPT
DES
DEL
Source Document
Target DTD
Params
Root
Element Definitions
Selected Elements BODY
Map This To
Repeat this element
Sort By
You can map the selected element to an element in the AltoXML document by selecting from the above list or dragging from the right to center pane. If you want to repeat this for every instance (row) of the AltoXML element, check the repeat box above. Note: You can only do this if the transform element AMD mapped element can be repeated. You can then optionally specify a sub-element to sort by.
If the selected element can have data as a member, click on the DataUsage tab below to define it. If you want it to only be
Mapping
Text Mapping
Conditional Usage
1618

Fig. 16F